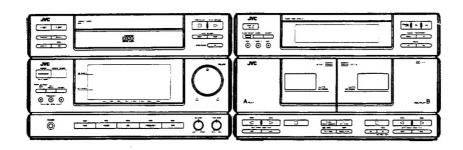


JVC

SERVICE MANUAL

COMPACT STEREO COMPONENT SYSTEM

CA-MX1BK MODEL No. CA-MX1LBK





This Service Manual is mainly for Accessory List, Packing Materials, Part Numbers and Instruction Book. About the disassembly procedure, adjustment procedure and so on, we issued another two Service Manuals for DR-MX1BK/LBK and AX-MX1BK/LBK, so please refer to them.

Component

Compact component [CA-MX1] is a unit composing of the following units.

Model No.	Unit No.	Model No.	Service Manual No.
	CD Amplifier	AX-MX1 SY7	No. 20179
CA-MX1	Deck Tuner	DR-MX1 544	No. 20180

Accessories List

\triangle	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1616A E30580-1617A E30580-1617ABS E30580-1618A BT20047D	Instruction Book Instruction Book Instruction Book Instruction Book Warranty Card	1 1 1 1		J Except J,LBS,LGI LBS LGI J
	BT20029C BT20060 BT-20117 BT-20119 BT-20108A	Warranty Card Warranty Card Warranty Card Audio Warranty Card Service Information Card	1 1 1 1	for New Zealand	A LBS LG A J
	BT20044F BT20066A EQB4001-016 EWP502-001 E304084-001	Safety Instruction Sheet EEC Agency AM Loop Antenna Biult in Antenna Loop Stand	1 1 1 1		J LBS Except LG
A	E67007-001 QZL1008-001 E43486-340A E67142-T3R15 QMF51A2-3R51S	Wire Antenna FTZ Instruction Sheet Safety Sheet Fuse Label Fuse	1 1 1 1		LG LBS U
	EMZ2001-011 UM-4NJ-2PSA EWP103-009 EWP103-010 QPGA005-00703	Adapter Battery Speaker Cord Ass'y Speaker Cord Ass'y Envelope	1 1 2 2 1	for Fuse and Fuse label	LGI,LEV U
	E66416-003 E41202-2 E41202-2B	Envelope Envelope Envelope	1 1 1	for Warranty Card	J Except J,LBS J,LBS

⚠ Safety Parts

The Marks for Designated Areas										
Jthe U.S.A	LGIItaly (with LW)									
AAustralia	LEVSwitzer Land (with LW)									
LE,LEFContinental Europe (with LW)	UOther Countries									
LBS	No mark indicates all areas.									

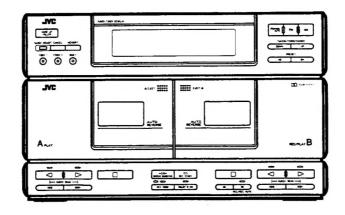


JVC

SERVICE MANUAL

DR-MX1BK MODEL No. DR-MX1LBK

(For CA-MX1BK/LBK)



Use CA-MX1BK/LBK's Service Manual (No. 20178) as the Instructions Manual

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Safety Precautions

- The design of this product contains special hardware and many circuits and components specially for safety purposes.
 For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
- 2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
- 3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (\(\triangle \)) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
- 4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
- 5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

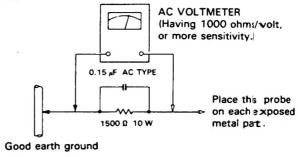
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current
 from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the
 chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

- 1. This equipment has been designed and manufactured to meet international safety standards.
- 2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
- 3. Repairs must be made in accordance with the relevant safety standards.
- 4. It is essential that safety critical components are replaced by approved parts.
- 5. If mains voltage selector is provided, check setting for local voltage.

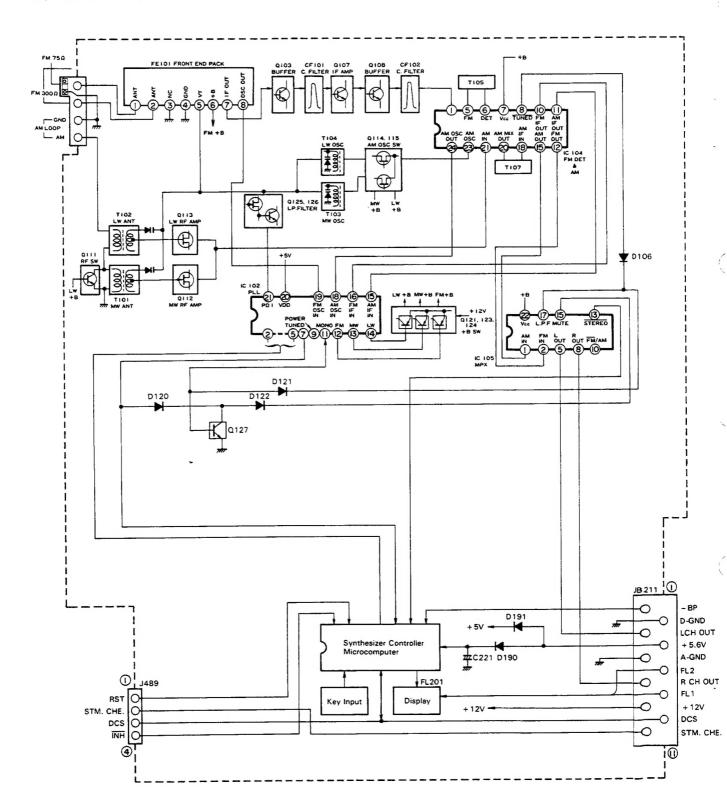
Specifications

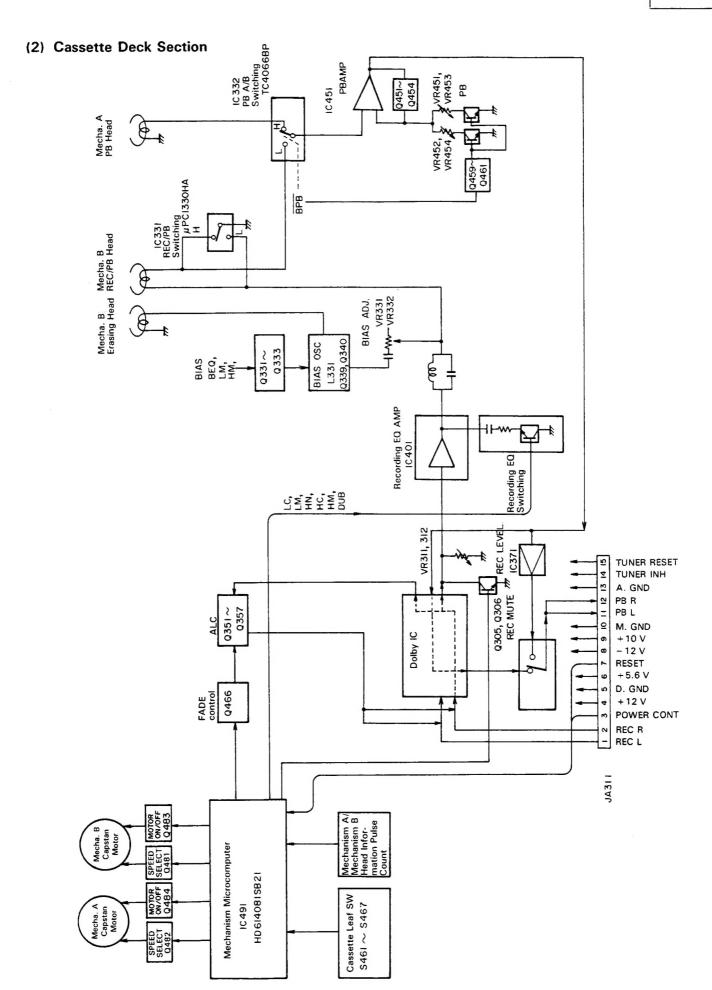
CD / Amplifier Component	Dimensions	10-7/8x6-3/4x12-3/8 inches (275x170x314 mm)						
	Weight	15.0lbs (6.8kg)						
Ampifier	Output Power	Main (SPEAKERS A): 30 watts per channel, min. RMS, both channels driven into 8 ohms, from 20Hz to 20kHz, with no more than 0.9% total harmonic distortion.						
		Subwoofer (SPEAKERS B): 20 watts per channel, into 3 ohms, at 80Hz, with 0.9% total harmonic distortion.						
	Total Harmonic Distortion at Half-Rated Power	0.3%						
	Input Sensitivity/ Impedance (1kHz) VIDEO/DAT, AUX	300mV/40k ohms						
	SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz						
	SEA Control Range	± 10dB						
Compact Disc Player	Dynamic Range (1kHz)	90dB						
	Signal-to-Noise Ratio	100dB						
	Frequency Response	5Hz-20kHz						
	Wow and Flutter	Unmeasurable						
ape Deck / Tuner Component	Dimensions	10-7/8x6-3/4x10-3/4 inches (275x170x273 mm)						
	Weight	7.3 lbs (3.3 kg)						
Tape Deck	Frequency Response	Metal : 30-17,000Hz CrO ₂ : 30-16,000Hz Normal : 30-15,000Hz						
	Wow and Flutter	0.08% (WRMS)						
FM Tuner	Usable Sensitivity	0.95μV/75 ohms (10.8dBf)						
	Signal-to-Noise Ratio (1HF-A Weighted)	MONO (at 85dBf) 80dB						
		STEREO (at 85dB) 73dB						
General .	Power Requirements Power Consumption	AC120V ~, 60 Hz 200 watts						

Design and specifications subject to change without notice.

Block Diagram

(1) Tuner Section





Description of Functions of Cassette Deck

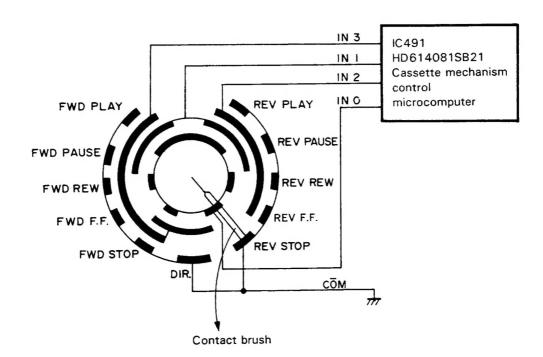
 The deck microcomputer has a deep relationship with the system microcomputer. However, the basic clock signals are operated independently.

This model's deck microcomputer is operated by receiving the RESET signals from AX-MX1BK's system microcomputer (IC502) and the INH control signals. Also, this deck microcomputer obtains cam position information as its input for grasping mechanism information and, based on the contents of these information, operates the mechanism and/or controls the deck's AMP system. The cam switch is worked by the capstan motor and solenoid, and constitutes a most vital swtich.

. Role of Cam Switch

The cam switch serves to offer information relating to the mechanism's state and the head's position to the microcomputer.

- With the power switched ON, confirm that the microcomputer's mechanism lies in its STOP position. If it lies in any other position, work the capstan motor and solenoid and stop it at the FWD or REV STOP position.
- The microcomputer will sense other positions relatively with this stop position as the standard.
 - Whenever the contact brush indicating the head's position passes through other contact positions and generates pulses, the microcomputer processes these pulses and obtains information on the head's current position.
- 3) The head and pinch roller will be actuated with this motor, but the head's direction will be changed mechanically by the cam at the DIRECTION position.



 The deck unit's mechanism A (playback only) and mechanism B (recording/playback) are both reversible mechanisms.

Mechanism A and mechanism B are respectively worked independently, so as long as signal exchange is performed properly, then even if mechanism A operates improperly, for example, the deck can be operated as long as mechanism B functions properly.

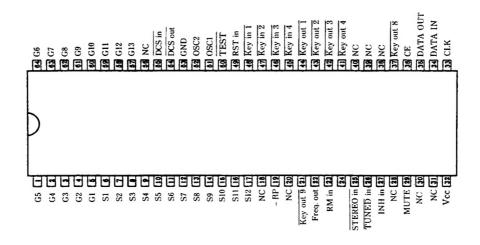
Description of Main ICs

■ IC201: HD614089SB81

(1) Characteristics

- An FM/AM all-band PLL frequency synthesizer can be formed. (Combination)
 - IC102: LC7218 PLL synthesizer IC
- 2. All functions can be displayed in integration by FL.
- Mutual linkage with various equipment is possible by using DCS data.
- 4. Backup is possible with the capacitor.
- Incorporated with four systems TIMER 1, TIMER 2, SLEEP TIMER/WAKE-UP TIMER and DAILY.

(2) Outside View

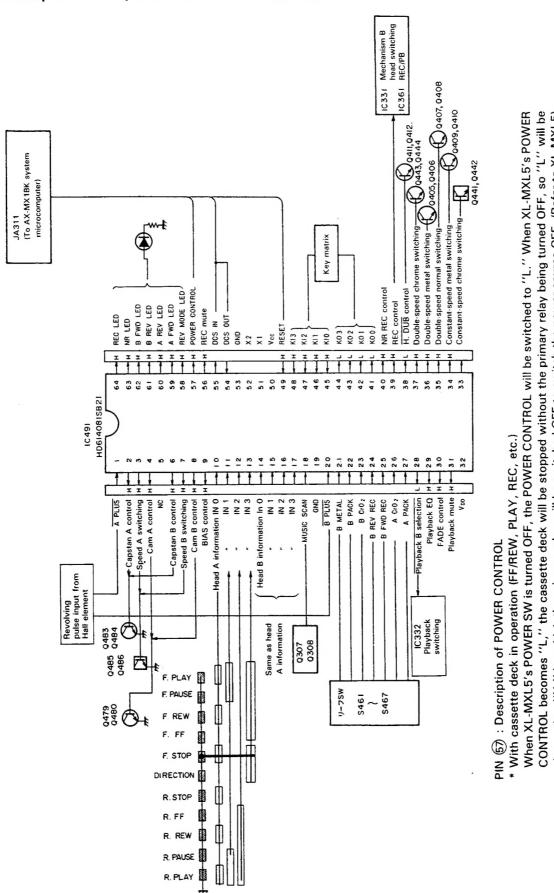


(3) Pin Function

Pin No.	Symbol	I/O	Functions and Operations
1	G5	0	
2	G4	0	
3	G3	0	FL grid control output
4	G2	0	
5	G1	0]
6	S1	0	
7	S2	0	
8	S3	0	
9	\$4	0	
10	S5	0	
11	S6	0	FL segment control output
12	S 7	0	
13	S8	0	
14	S9	0	
15	S10	0	
16	S11	0	
17	S12	0	J
18	NC	-	Not usable with this model
19	-BP	1	Power source for FL drive circuit
20	NC	_	Not usable with this model
21	Key out 9	0	Key matrix output
22	Freq. out	0	Test signal output
23	RM in	1	Pull up
24		-	Power source voltage (+5V)
25	STEREO in	-1	STEREO indicator input
26	TUNED in	ı	TUND indicator input
27	INH in	1	Inability signal input
28	NC	-	Not usable with this model
29	MUTE	0	Muting output
30	NC	-	Not usable with this model
31	NC	_	Not usable with this model
32	Vcc	_	Power source voltage (15V)

Pin No.	Symbol	1/0	Functions and Operations
33	CLK	0	Clock signal output to LC7218
34	DATA IN	1	Data signal input from LC7218
35	DATA OUT	0	Data signal output to LC7218
36	CE	0	Ihobal? signal output to LC7218
37	Key out 8	0	Key matrix output
38	NC		1
39	NC	_	Not usable with this model
40	NC	-)
41	Key out 4	0)
42	Key out 3	0	Key matrix output
43	Key out 2	0	Ney mainx output
44	Key out 1	0)
45	Key in 4	1	,
46	Key in 3		Key matrix input
47	Key in 2	1	
48	Key in 1	- 1	[)
49	RST in	1	Reset signal input
50	TEST	-	Power source voltage (+5V)
51	OSC1	1	Clock oscillation input
52	OSC2	0	Clock oscillation output
53	GND	-	GND
54	DCS out	0	DCS signal output
55	DCS in	1	DCS signal input
56	NC	_	Not usable with this model
57	G13	0	1)
58	G12	0	
59 60	G11 G10	0	[
61	G9	0	FL grid control output
62	G8	0	
63	G7	0]
64	G6	0	
04	Go	U	

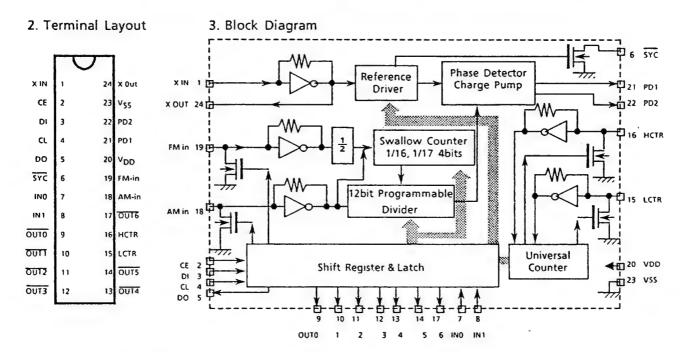
■ IC491: HD614081SB21 Description of Peripheral Parts of Cassette Mechanism and Control Microcomputer



CONTROL becomes "L," the cassette deck will be stopped without the primary relay being turned OFF, so "L" will be changed to "H," by which the primary relay will be switched OFF to switch the power source OFF. (Refer to XL-MXL5)

Description of Major LSI ICs.

- IC102: LC7218 (PLL Synthesizer)
 - 1. The main function descriptions
 - (1) It makes the local oscillation frequency by the control data from IC201.
 - (2) Decode the control signal and transmit the signal for receiving conditions.
 - (3) For the best tuning, count the internal-frequency and transmit the data to IC201.

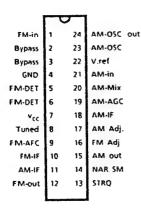


4. Pin Fu	unction D	escription		
Pin No.	Symbol	Name	1/0	Functions and Operations
1,24	X in , X out	X in , X out	1/0	Crystal oscillator (7.2MHz).
2	CE	CE	1	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	DI	-	Receive the control data from the controller (IC421).
4	CL	CL	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	DO	0	Transmit the data from LC7218 to the controller which is synchronized with CL.
6	SYC	SYC	-	Not used.
7	INO	Tuned in	1	Receive the tuned signal from IC104 (LA1266A).
8	IN1	Stop in	1	Not used.
9	OUT 0	POWER	0	Not used.
10	OUT 1	QSC	0	ON mode with "H" and OFF mode with "L".
11	OUT2	MONO	0	It is "H" on FM-monaural, "L" on FM-Stereo.
12	OUT3	FM	0	It is "H" on FM mode.
13	OUT4	MW	0	It is "H" on MW mode.
14	OUT5	LW	0	It is "H" on LW mode.
.15	LCTR	AM-IF	1	Universal counter input for AM-IF from IC104 (LA1266A).
16	HCTR	FM-IF	1	Universal counter input for FM-IF from IC104(LA1266A).
17	OUT6	IF REQ	0	Output the "IF-signal request" to IC104 when the pin-7 (tuned in) go to "H".
18	AM in	AM in	1	Input the local oscillator signal of AM.
19	FM in	FM in	1	Input the local oscillator signal of FM.
20	V _{DD}	V _{DD}	-	This is a terminal of power supply.
21	PD1	PD1	0	PLL charge pump output: When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	PD2	0	Not used.
23	Vss	Vss	-	Ground terminal.

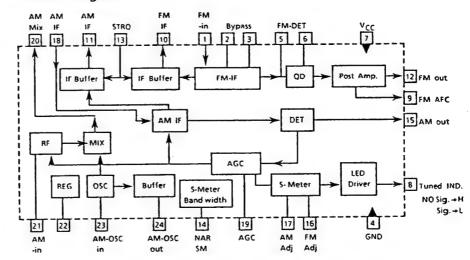
■ IC104: LA1266A (FM AM IF AMP & detector)

- 1. The main function descriptions
 - (1) Amplify and detect of FM intermodulation frequencies.
 - (2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Top View



3. Block Diagram

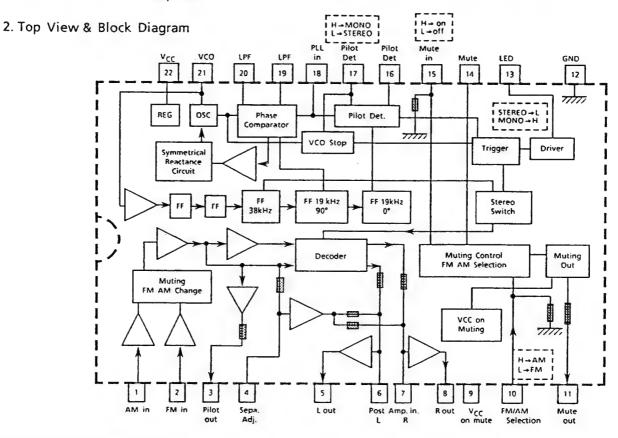


4. Pin Function Description

Pin No.	Symbol	1/0	Functions and Operations
1	FM in	1	This is an input terminal of FM IF Signal.
2,3	Bypass		Bypass of FM IF Amp.
4	GND		This is the device ground terminal.
5,6	FM DET		FM detect transformer.
7	V _{cc}		This is the power supply terminal.
8	Tuned		Not used.
. 9	FM AFC	0	This is an output terminal of voltage for FM-AFC.
10	FM IF out	0	When the signal of IF REQ of IC102(LC7218) applied to pin13, the signal of FM IF does output.
11	AM IF out	0	When the signal of IF REQ of IC102(LC7218) applied to pin13, the signal of AM IF does output.
12	FM out	0	FM detection output.
13	STRQ	T	The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal going to "High".
14	NARSM		Control the Band-width of signal meter.
15	AM out	0	AM detection output.
16	FM Adj		For adjust the stop level (or mute level) of FM.
17	AM Adj		For adjust the stop level (or mute level) of AM.
18	AM-IF	1	Input of AM IF Signal.
19	AM-AGC	ı	This is an AGC voltage Input terminal for AM.
20	AM-MIX	0	This is an output terminal for AM mixer.
21	AM-IN	T	This is an input terminal for AM RF Signal.
22	V.REF		
23	AM-OSC		This is a terminal of AM Local oscillation circuit.
24	AM-OSC out	0	AM Local Oscillation Signal output.

IC105: LA3401(FM MPX Detector)

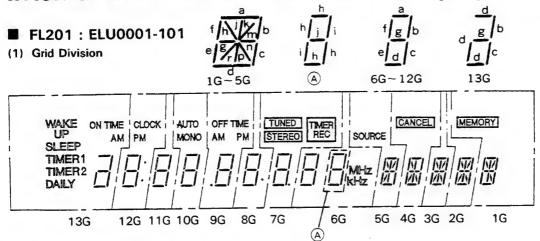
- 1. The main function descriptions
 - (1) Detect the FM Multiplex Signal (Stereo signal).
 - (2) When the FM Signal is Stereo Modulation, it will output the signal for indicator.
 - (3) AM/FM Audio Amplifier.



3. Pin Function Description

Pin No.	Symbol	H/L	1/0	Functions and Operations
1	AM in			This is an input terminal for AM detection signal.
2	FM in			This is an input terminal for FM detection signal.
3	Pilot out			Output of MPX pilot signal (Connected to Pin18).
4	Sepa. Adj.			Separation adjustment.
5	L. out		0	Left channel signal output.
6	RL		0	Reversal output of Pin5.
7	RR		0	Reversal output of Pin8.
8	R out		0	Right channel signal output
9	V _{CC} on mute			The muting time after power on is controlled by the connected capacitor.
10	FM/AM		-	Switch-over the FM/AM input. "H": AM, "L": FM
11	Mute out		0	Muting signal output.
12	GND			Ground terminal.
13	Stereo		0	Stereo indicator output. Stereo: "L", Mono: "H"
14	Mute			The muting time at switch-over the FM/AM is changed by the connected capacitor.
15	Mute in		-	Muting signal input. "H": Mute on, "L": Mute off.
16	LPF			Low pass filter of pilot detector.
17	LPF			While this terminal going "H", the VCO stop.
18	Pilot in			PLL input.
19	LPF			Loop filter of PLL.
20	LPF			Loop filter of PLL.
21	vco			Voltage controlled oscillator terminal.
22	V _{cc}			Power supply.

Internal Connections for the FL Display Tube



(2) Terminal Connections

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CONNECTION	F	F	N	N	13	S	S	13	S	S	12	12	S	11	S	10	S	9	9	S	S	8	S	7	S	6	S	N	N	N
	1	1	P	C	G	1	2	G	3	4	G	G	5	G	6	G	7	G	G	8	9	G	10	G	11	G	12	C	C	C

PIN NO.	31															
CONNECTIO	N 6 G	N C	5 G	N C	4 G	4 G	N C	3 G	N C	$\frac{2}{G}$	N C	1 G	N C	N P	F 2	F 2

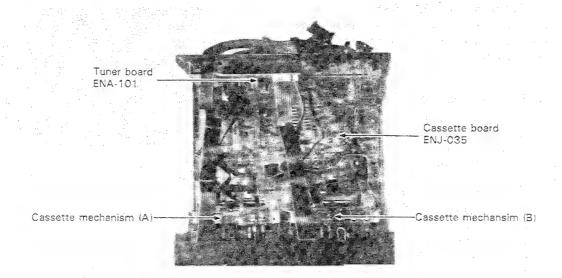
Notes F: Filament G: Grid P: Anode NP: No Pin NC: No Connection

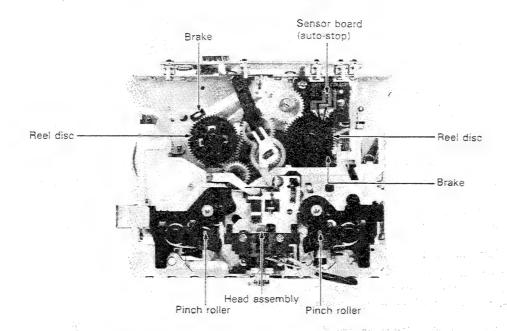
(3) Anode Connection Table

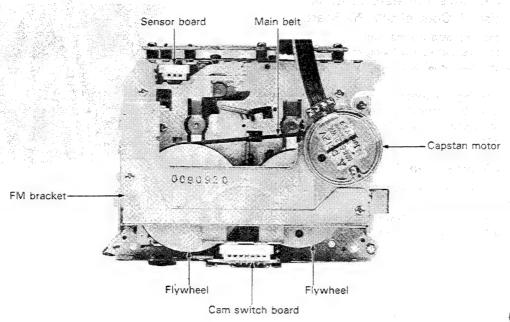
Inside Connections

	13G	12G	11G	1 0 G	9 G	8 G	7 G	6 G	5 G	4 G	3 G	2 G	1 G
S 1	d	d	d	ď	đ	d	d	d	d	d	d	d	d
\$2		e	e	e	е	e	e	e	e	e	e	е	e
S 3	c	С	С	С	c	С	С	С	С	С	С	С	С
S 4.	8							kHz	r	г	r	r	m
S 5	b	D P (:)			D P (.)	D P (:)	D P (.)	MHz	k	n	n	n	n
S 6	DAILY				AM		STEREO	ī	j, p	ĵ, p	j, p	j, p	j, p
s7	TIMER 2	g	8	8	g	8	g	8.	g, m	g, m	g, m	g, m	. &
S 8	TIMER I	f	f	f	f	f	f	f	f	f	f	f	f
s 9	SLEEP	ь	ь	ь	ь	ь	ь	ь	ь	ь	ъ	ь	ь
S 1 0	WAKE UP	a	a	a	a	a	a	a	a	a	a	a	a
S 1 1	AM	PM		моно	PM		TUNED	j	h	h	h	h	h, k
S 1 2	ON TIME	CLOCK		AUTO	OFF TIME		TIMER REC	h	SOURCE	CANCEL	k	k	MEMORY

Arrangements of principal Parts







Disassembling Procedures

1. How to Remove the Top Cover

- (1) Remove the two black screws from the backside, then remove the four black screws on both ends.
- (2) Raise the top cover's rear part and remove the it to the upper rear direction.

2. How to Remove the Front Panel

- (1) Remove the two black screws ① fixing the panel from the bottom, then the two black screws ② fixing the mechanism. (Refer to Fig. 2)
- (2) Remove all connectors from the front panel.

3. How to Remove the Cassette Mechanism

(1) Remvoe the four blue screws (3) fixing the cassette mechanism. (Refer to Fig. 3)

Reference: The screw fixing the upper side is a double-thread screw for plastics.

The screw fixing the lower side is a tap tight screw for chassis.

Note: The cassette mechanism is grounded through the bottom cover, so when checking the operations with the bottom cover removed (especially when checking the signal system), be sure to ground the chassis by using an alligator clip or other suitable gadget. Also, since this cassette mechanism is designed for pack sensing, remember that it cannot be operated without any tape.

4. How to Remove the Cassette Holder

- (1) Remove the gear oil damper (fixed with a double-thread screw)
- (2) Remove the spring from the bracket.
- (3) Press the holder and remove the switching lock.

5. How to Remove the Front SW PC Board

- (1) Remove the front panel.
- (2) Remove the four small screws (4) fixing the front SW board, then the three small screws (5). (Refer to Fig. 3)

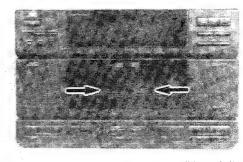
How to Remove the Mechanism A/ Mechanism B Control SW PC Board

- (1) Remove the cassette mechansim.
- (2) Remove the bracket screw fixing the cassette holder.
- (3) Remove the two small screws fixing the control SW board.

Note: When refitting the front SW board on mechanism A/mechanism B control SW board, be sure to confirm that their buttons and LEDs are fitted properly into their holes.

7. How to Remove the Tuner PC Board

- (1) Remove the black screw fixing the rear panel's antenna terminal.
- (2) Remove the four white screws fixing the tuner board.
- (3) The tuner board can now be raised.



The cassette door, in open state, can be slide and disengaged in the arrow's direction. Remove the cassette door as when adjusting the head's angle. (Refer to Fig. 1)

Fig. 1

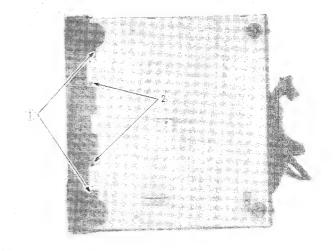
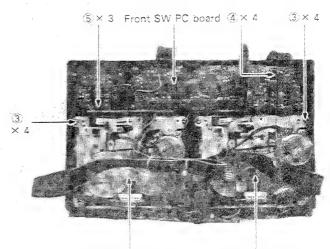


Fig. 2



Mechanism B Fig. 3 Mechanism A

8. How to Remove the Cassette Amp PC Board

- Remove the two black screws fixing the rear panel's underside, then disengage the rear panel.
- (2) Remove the three white screws fixisng the cassette AMP board.
- (3) The cassette amp board, together with the rear panel, can now be raised.

9. How to Remove the Cassette Mechanism Parts

Head Assembly

Remove the two screws ① fixing the head assembly. When removing only the head block, remove the two screws fitted from the head gap side. (The bonded part can be removed with ease by heating.)

When assembling:

- 1) Fit the head lever into the position shown in the diagram.
- 2) Adjust the head, then bond and lock the head assembly.

■ Pinch Roller Arm Assembly (Same Procedures for Both Forward/Reverse Sides)

- 1) Remove the pawl (A) fixing the pinch roller arm assembly.
- 2) Detach the pinch roller return spring (small outside spring) from the hook.

■ Reel Disc Assembly

Detach the triangular pyramid-shaped reel disc stopper from the assembly's tip (Use a new stopper when reassembling.)

■ Disc Revolution (Auto Stop) Sensor

Remove the screw ② fixing the sensor board. Fit the Hall element by matching it to the sensor board.

FM Bracket and Flywheel

- 1. Remove the four screws 4 and 5 fixing the FM bracket.
- 2. Remove the FM bracket by sliding it to the left (Fig. 8)
- The belt will be disengaged. Fit the belt by the method shown in Fig. 7. Next, detach the flywheel. (The washer can be removed in the direction of the pinch roller.)

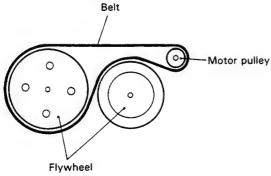


Fig. 7

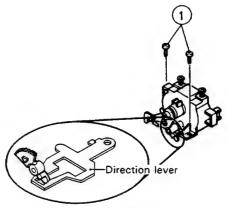
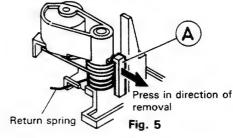
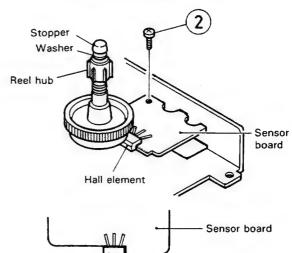
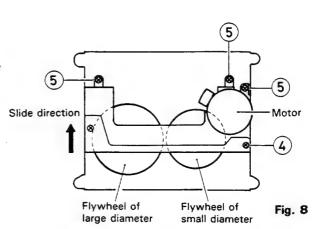


Fig. 4







Hall element

Fig. 6

■ Reel Base Unit Assembly

- 1. Remove the FM bracket, then detach the flywheel.
- 2. Remove the two screws 6 fixing the reel base unit assembly.
- 3. Remove the solders from the solenoid wires of the cam switch board.

Precautions When Assembling Match the assembling places with places having the same symbols.

A and A'
B and B'

C and C'
D and D'

Match their grooves

Match the bosses of C' and D' at the periphery of the cam gear

Match their grooves

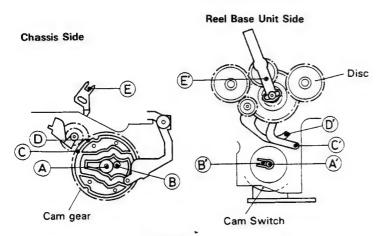


Fig. 10

Sensor board connector When assembling, move the arm slightly in the arrow's direction Cam switch Cam switch board Remove the solder Fig. 9

■ Select Cam Gear

- 1. Remove the flywheel and reel base unit.
- 2. Remove the trigger lever's torsion spring.
- 3. Remove the trigger lever stopper C.
- 4. Remove the select cam gear's lock washer. (Use a new lock washer when reassembling.)

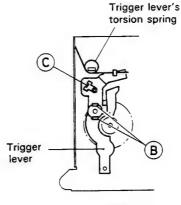


Fig. 11

Trouble Shooting

Before repairing this model, use the following characteristics for reference.

1. Description of CA-MX1BK/LBK System

In the CA-MX1BK/LBK system, the power is supplied to DR-MX1 (deck tuner) with a special-purpose system connector. Accordingly, depending on the trouble symptoms of the tuner unit and deck unit, it will be necessary to repair AX-MX1BK (CD AMP), so be sure to pass judgements in conformance with the symptoms after first grasping the system accurately.

2. Deep Relationship Exists Between System Microcomputer and Deck Microcomputer

The deck microcomputer receives RESET and INH control signals from the system microcomputer for mechanism initializing (stopping of both mechanisms). With this model, the time limit is set at about 4 sec and, in the event the operation is not consummated within the set time, this is sensed as an abnormality and the motor drive output switched OFF. This disposition is performed accurately since mechanisms A and B are respectively independent and mechanism B will be actuated if mechanism A was troubled, and conversely mechanism A will be actuated even if mechanism B was inoperative. Also, operations are resumed by the subsequent manipulation, so even if the system was not actuated by the first manipulation, it will be actuated by the second manipulation.

3. Deck Mechanism is Double Reverse Mechanism for Mechanism A (Playback Only) and Mechanism B (Recording/Playback)

The pack switch and cam switch are for input into the mechanism microcomputer, and the rotary sensor (Hall IC) output for input into the system microcomputer.

4. Description of Power Source Circuit

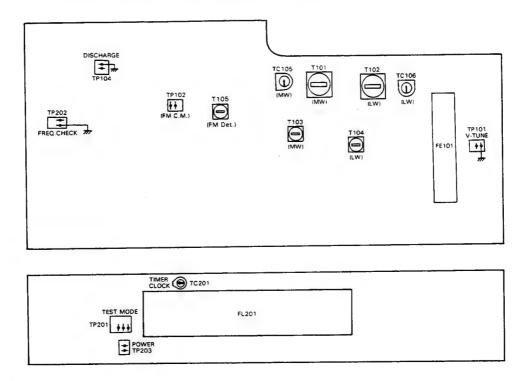
The basic power sources are all built into AX-MX1BK (CD AMP). The small transformer (T001) supplies power (+5 V) to the system microcomputer, power (+5 V) to the DR-MX1BK tuner unit's microcomputer, power (-30 V) to the FL display unit, power (AC 4.5 V) to the heater and power for driving the AC relay. Meanwhile, the large transformer (PT001) supplies power to all CD player units, power (+12 V) to the tuner unit's other parts and power to parts other than the AX-MX1BK (CD AMP) system's microcomputer.

5. Description of System Connectors A and B

The system connectors A and B connect the deck unit and tuner unit with the power supply, signals, microcomputer RESET and INH control signals and computer links. Therefore, be sure to first connect the system connectors A and B to AX-MX1BK, then connect the power cord to an AC receptacle. This is because the RESET and INH control signals of the deck microcomputer and tuner microcomputer are controlled by AX-MX1BK's system microcomputer. Remember that if the system connectors A and B are connected when AX-MX1BK's power cord remains connected to an AC receptacle, this will not only fail to actuate the deck unit and tuner unit but may also damage the power source circuits and microcomputers.

Adjustment Procedures (Tuner Section)

- * When adjusting the core, be sure to use an adjustment rod having no metal parts.
- * When making adjustments, connect the CD AMP (AX-MX1). When doing so, be sure to disengage the AC plug, next connect the system connectors A and B, then re-engage the AC plug.



FM/AM Tuner Alignment Procedures

FM oscillator

- (1) Set the frequency display to "108.0MHz".
- (2) Confirm the FM inter-station noise is received.
- (3) Confirm the voltage of test point "TP101" becomes 8.0V±2.0V.
- (4) Set the frequency display to "87.5MHz" and confirm the voltage of test point "TP101" becomes 1.6V±1.0V.

FM detector coil: T105

- (1) Connect a digital voltmeter to test point "TP102", and receive to "100.1MHz" signal with SSG ATT 70dB.
- (2) Adjust T105 so that the digital voltmeter reads $0\pm1.5\text{mV}$.

MW oscillator: T103

- (1) Set the frequency display to [530kHz] (522kHz) {531kHz} ∫530kHz and confirm the voltage of test point TP101 becomes 0.9V±0.2V.
- (2) Set the frequency display to [1710kHz] (1629kHz) $\{1602kHz\} \lceil 1600kHz \rfloor$ and confirm the voltage of test point TP101 becomes $[8.0V\pm0.8V]$ $(7.5V\pm0.8V)$ $\{7.2V\pm0.7V\}$ $\lceil 7.2\pm0.7V \rfloor$.
- (3) If its voltage exceeds the allowance, adjust T103 to obtain the voltage.

■ MW antenna coil: T101

- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T101 to obtain the best receiving sensitivity on 600kHz or 603kHz.

■ MW antenna trimmer: TC105

(1) Adjmust TC105 to obtain the best receiving sensitivity on 1400kHz or 1404kHz.

Note: [] for Italy

■ LW Oscillator : T104

- (1) Set the frequency display to 144kHz and adjust T104 so that the voltage of TP101 becomes $0.8V\pm0.4V$ [0.8V±0.1V].
- (2) Set the frequency display to 353kHz [290kHz] and confirm the voltage of test point TP101 becomes 7.7V±0.6V [5.7V±0.5V].

LW antenna coil: T102

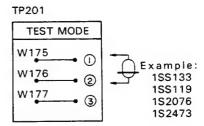
- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T102 to obtain the best receiving sensitivity on 164kHz [164kHz].

MW antenna trimmer : TC106

 Adjust TC106 to obtain the best receiving sensitivity on 353kHz [245kHz].

■ Timer clock frequency adjustment : TC201

- Switch OFF the CD AMP (AX-MX1BK)'s power source, then pull out the AC plug.
- (2) Shortcircuit TP201's terminals 2 and 3 with the diode as shown in the accompanying diagram, then insert the AC plug into the receptable to switch the power ON.
- (3) Confirm that the tuner's FL display is off, then remove the diode and connect the frequency counter to TP202 (FREQ CHECK).
- (4) Adjust TC201 to a frequency of 34,952.5 Hz±0.1Hz.



■ POWER

This set is not provided with a power switch, so switch the power source ON/OFF by shortcircuiting TP203.

DISCHARGE

When discharging the backup, shortcircuit the two terminals of TP104.

Adjustment Procedures (Cassette Deck)

Adjustment of Cassette Deck Assembly

- 1. Measuring Instruments Necessary for Adjustment
- (1) Low-frequency oscillator (providing an output of 0 dB at 600 Ω final terminal at an oscillation frequency of 50 ~ 20 kHz).
- (2) Attenuator (impedance 600 Ω)
- (3) Electronic potentiometer.
- (4) $600~\Omega$ resistor (for attenuator matching).
- (5) Distortion meter (with built-in band pass filter).
- (6) Torque gauge (cassette) CTG-N (for adjustment of structural relations).
- (7) C-120 tape (for confirmation of running condition) (for adjustment of structural relations).
- (8) Standard tapes (use our specified standard tapes): VTT-703L (for head angle adjustment) TMT6247 (for music scanning)

TMT6237 (for music scanning)
TS-12(SF), TS-11 (METAL), TS-10 (chromium)
(standard recording tapes)
VTT-712 (tape speed, wow/flutter)
VTT-724 (standard level)

Note:

When making adjustments, connect the CD AMP (AX-MX1BK). In this case, first disconnect the AC plug, next connect the system connectors A and B, then insert the AC plug.

2. Adjustment and Repair of Structural Relations

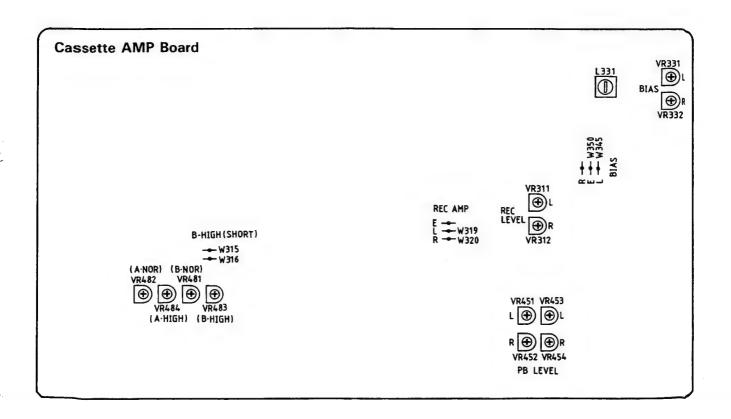
Before adjusting electric circuits, adjust and confirm the structural relations.

Item	Adjustment Method	Adjustment Place	Standard Value	Remarks
Adjustment of recording/ playback head's angle	Connect the output terminal of DAT REC to the voltmeter. Play back VTT-703L			Change the head whenever its prescribed characteristics cannot be obtained due to the head's wearout, wire severance or excessive.
Mechanism A	3. Adjust screw (A) so that the voltmeter's output will become maximum at PLAY (►).	Screw A	Maximum	magnetism, then adjust its angle after the replacement, also adjust the playback level, recording bypass current, etc.
	4. Adjust screw (B) so that the voltmeter's output will become maximum at PLAY (►).	Screw B	Maximum	2. Change the head whenever the left and right output level difference exceeds 3~4 dB; otherwise, claims may be lodged against the system.
Mechanism B	5. Adjust screw © so that the voltmeter's output will become maximum at PLAY (►).	Screw ©	Maximum	
	6. Adjust screw D so that the voltmeter's output will become maximum, at PLAY (►).		Maximum	
ø ø	7. To prevent screw loosening after the	adjustment, a	ttach thread	locks to the screws (A) (B) (C) and (D).
Playback torque	Use the torque measurement cassette measure the torque in playback mode	CTG-N and	20~65 g-cm	If a standard torque cannot be obtained, clean the takeup disc assembly or change it:
Fast-feed torque	Measure the turque in the same mannin fast-feed mode.	ner as above	Over 80 g-cm	If the standard torque can not be obtained, 1. Clean the parts around the capstan belt, motor pulley and flyw heel. 2. Change the belt, idler and other fautly parts.
Rewinding torque	Measure the torque in the same mannin rewinding mode.	ner as above	Over 80 g-cm	If the standard torque cannotbe obtained, clean the parts around the capstan belt, motor pulley, flyweel and supply reel disc.
Wow/flutter	Play back VTT-712, connect the wow, to this model's DAT REC terminal, and it is within a value of 0.15% (WRMS	confirm that		Even if the measured value e

Adjustment of Electric Circuits

- Perform the following adjustments after adjusting the head's angle.
- In principle, never perform adjustments by other than prescribed procedures.
- Perform these adjustments with the NR switch turned OFF.

ltem	Adjustment Method	Adjustment Place	Standard Value	Remarks
Motor speed	Play back VTT-712, switch the function to tape, then connect the frequency counter to the DAT REC terminal.	1		In case of a measuring instrument incorporating a frequency counter in the wow/flutter meter, simply connecting to its INPUT will be sufficient.
	 Constant-speed adjustment (be sure to perform this first of all). Play back mechanism A (mechanism B), then turn the cassette switch board's semistationary resistor VR482 (VR481) and adjust to 3,000 Hz. 	(mecha. A) VR481	3000 Hz	
	3. High-speed adjustment Play back mechanism B, then short- circuit the main APM board's W315 and W316, by which mechanism B will be give a high speed. Next, turn the semistationary resistor VR483 and adjust to 4,800 Hz.		4800 Hz	For high-speed adjustment of mechanism A, mount the recording tape in mechanism B and adjust VR484 in high-speed dubbing mode.

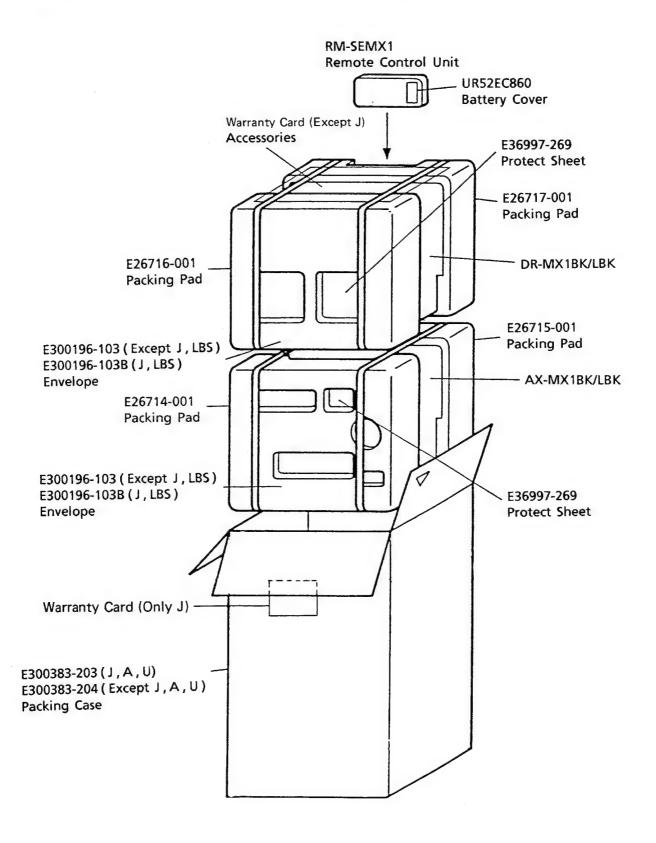


Item	Adjustment Method	Adjustment Place	Standard Value	Remarks
1 Playback level	Play back VTT-724 (1 kHz) and adjust so that the outputs of W319(L) and W320(R) are -5.5 dBs.	A VR453(L) VR454(R) B VR451(L) VR452(R)	5.5 dBs	The playback level will be changed when the head is replaced, so adjust to the proper state. In this case, fonfirm that the electronic voltmeter's impedance is over $100~\text{k}\Omega$
2 Recording AMP gain	Input the AUX terminal with -8.2 dBs (1 kHz) signals, switch the function to AUX and mechanism B to recording mode. Confirm that the outputs of W319(L) and W320(R) are -5.5 dBs.		-5.5 dBs ±1 dB	
3 Recording bias frequency	Connect the frequency counter between W345(L) and W350(E) of bias T.P., then record with the metal tape.	L331	105 kHz + 2 k, - 7 kHz	
4 Recording frequency characteristics	With the NR switch turned OFF, record 1 kHz with an input of -28.2 dBs from AUX, then record 100 Hz/110 kHz. Adjust VR331 and VR332 so that, when this is played back, the difference of the 100 Hz/10 kHz output with respect to the 1 kHz output will satisfy the standard value. (Basically, adjust so that the 1 kHz and 10 kHz outputs will be flat.)	VR332(R)	0±3 dB at time of 100 Hz and 0±2 dB at time of 10 kHz, with 1 kHz as the standard	istics on the bias current is much greater than in the case of an oper
Response (dB)		•	owering of l	When bias currents is insufficient When bias current is appropriate When bias current is excessive
	100Hz	1kHz		10kHz →Frequency

adjustment.

Item	Adjustment Method	Adjustment Place	Standard Value	Remarks
5 Recording level	1) Impress an input of 1 kH (-8.2 dBs) on the AUX termina and record with the chromium tape 2) Adjust the recording signal currer so that the outputs of W319(L) an W320(R) will be -5 dBs when this played back.	VR312(R)	- 5 dBs + 1 dB, - 0.5 dB	Perform the adjustment with the chromium tape, then confirm that the level difference between the normal tape and metal tape is within 1.5 dB, and that the left and right level difference is within 1.0 dB.
6 Confirmation of recording/ playback distortion	 Record the AUX input's 1 kH (-8.2 dBs). Check the output when this i played back with a distortion meterand confirm that the value satisfies the prescribed value. 	s r	Normal tape Under 3% Chromium tape Under 3% Metal tape Under 3%	Perform after adjusting the recording frequency characteristics and recording level.
7 Confirmation of recording/ playback S/N ratio	 Record the AUX input's 1 kH (-8.2 dBs) signals, sample th input during the recording an perform mute recording. (Use th REC MUTE button.) Play back this recording, measur the ratio between 0 dB recordin output and mute recording output with the electronic voltmeter, an confirm that the ratio satisfies th prescribed value. 	e d d e e e t	Normal tape Over 45 dB Chromium tape Over 45 dB Metal tape Over 45 dB	
8 Confirmation of erasing ratio	 Record the AUX input's 1 kH (0 dBs) signals. Rewind and erase a part of th recording. Measure the output ratio of th recorded portion and erased portio with an electronic voltmeter. 	e e	Over 55 dB	For this measurement, connect a 1 kHz BPF (bandpass filter) between the deck and the electronic voltmeter. Confirm with the metal tape.
9 Confirmation of auto-stop	Confirm there is no auto-stop neather the magnet and the Hall IC.)	ar the end of R	EW. (Provide	e a gap of within 0.5±0.3 mm between
10 Confirmation of music scanning	Use TMT-6247 and conform SCAN winding and at time of 2. Also confirm that TMT-6237	f starting of F	REW SCAN	

■ Packing Materials and Part Numbers



A-MX1BK

Specifications

CD / Amplifler Component		
•	Dimensions	10-7/8x6-3/4x12-3/8 inches (275x170x314 mm)
	Weight	15.0lbs (6.8kg)
Ampifler	Output Power	Main (SPEAKERS A): 30 watts per channel, min. RMS, both channels driven into 8 ohms, from 20Hz to 20kHz, with no more than 0.9% total harmonic distortion.
		Subwoofer (SPEAKERS B): 20 watts per channel, into 3 ohms, at 80Hz, with 0.9% total harmonic distortion.
`	Total Harmonic Distortion at Half-Rated Power	0.3%
	Input Sensitivity/ Impedance (1kHz) VIDEO/DAT, AUX	300mV/40k ohms
	SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz
	SEA Control Range	± 10dB
Compact Disc Player	Dynamic Range (1kHz)	90dB
	Signal-to-Noise Ratio	100dB
	Frequency Response	5Hz-20kHz
	Wow and Flutter	Unmeasurable
Tape Deck / Tuner Component	Dimensions	10-7/8x6-3/4x10-3/4 inches (275x170x273 mm
	Weight	7.3 lbs (3.3 kg)
Tape Deck	Frequency Response	Metal : 30-17,000Hz CrO2 : 30-16,000Hz Normal: 30-15,000Hz
	Wow and Flutter	0.08% (WRMS)
FM Tuner	Usable Sensitivity	0.95µV/75 ohms (10.8dBf)
	Signal-to-Noise Ratio (1HF-A Weighted)	MONO (at 85dBf) 80dB
		STEREO (at 85dB) 73dB
General	Power Requirements Power Consumption	AC120V ~, 60 Hz 200 watts

Design and specifications subject to change without notice.

EtTing sTartEd

The CA-MX1BK produces a full, powerful bass sound.

★ With JVC's newly-developed forced air cooling system, delivering 30 watts per channel (Full-Range speakers) and 20 watts per channel (Subwoofers), and the labyrinth port system speakers, the CA-MX1BK can produce the same high-quality bass sound as a large stereo system.

It has a variety of functions, which are equivalent to those of large, expensive stereo systems.

- * Remote control of computerized 7-band SEA graphic equalizer.
- ★ Programmable timers for setting recording, wake-up music, and fall-asleep music.
- * Storage of 40 radio stations (FM and AM) in memory.
- ¥ Fade-out of last track during direct CD-to-tape recording.
- ★ CD tracks can be recorded on both sides of a cassette tape without splitting songs at the end of a side.
- ★ CD tracks can be played back or recorded on both sides of a cassette tape in any order.

Input terminals for connecting a Digital Audio Tape (DAT) Deck, and the sound portion of Video Cassette Recorder (VCR).



Features .

Connection Notes

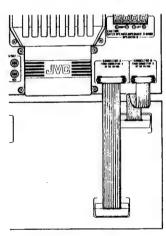


Connecting the Two Stereo Components Before you plug in the system, you must make all the necessary connections.

If you plug the power cord into an outlet without connecting the two stereo components, the "POWER STANDBY" light will blink. You will be unable to operate the system without making these connections.

♦ Connect the CD/Amplifier component and the Tape Deck/Tuner component.

Connect the two ribbon cables (CONNECTOR A and B) from the Tape Deck/Tuner component to the CD/Amplifier component.



 If the system does not work well or needs repairing, please take both the CD/Amplifier and Tape Deck/Tuner components with you to the nearest agent.

Getting Started

Introduction :

Thank you for purchasing this JVC CA-MX1BK Compact Compo. We hope it will be a valued addition to your home, giving you years of enjoyment.

Be sure to read this instruction manual carefully before operating your new stereo system. Here you will find all the information you need to set up and use the system.

For questions that cannot be answered in this manual, please contact your dealer.

About this Manual

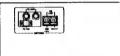
This instruction manual will help you with the following:

- ★ Connecting the components of the system, installing the antennas, and connecting other components (such as a VCR or DAT deck) to the system.
- ★ Learning the operations of the components of the system (Amplifier, CD Player, Tape Deck, Tuner, and the Remote Controller).
- ★ Learning additional functions of the system, such as using the timers, using the SEA graphic equalizer, presetting broadcast stations in memory, and using the various recording capabilities.
- * Trouble-shooting, if a problem should occur.

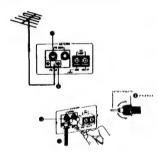
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Getting Started

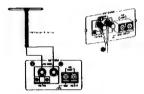
Connecting an FM Antenna



75-Ohm Antenna Cable



300-Ohm Antenna Cable



To receive FM radio broadcasts, you will should connect an FM antenna to the Tape Deck/Tuner component.

FM antennas use two types of cable connections: 75-ohm cables have a round coaxial connection, 300-ohm cables have a flat connection.

Connect your FM antenna as follows:

- Loosen the screws holding the bracket to the rear panel of the Tape Deck/Tuner component.
- Loosen the cap of the 300/75-ohm terminal on the rear panel of the Tape Deck/Tuner components.
- Insert the round antenna cable through the bracket from below.
- Make sure the shield braid on the cable contacts the bracket, and the center conductor of the cable contacts the 300/75-ohm terminal.
- Tighten the bracket screws and the cap on the 300/75-ohm terminal.

Note: Make sure the antenna conductors do not touch any other terminals on the system. This could cause poor reception.

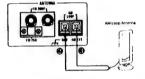
- Loosen the cap on the 300/75-ohm terminal on the rear panel of the CD/Amplifier component.
- Loosen the cap on the 300-ohm terminal on the rear panel of the CD/Amplifier components.
- Connect the two conductors of the antenna cable to the 300-75-ohm terminal and the 300-ohm terminal.
- 4. Tighten the caps on both terminals.

Note: Make sure the antenna conductors do not touch any other terminals on the system. This could cause poor reception.

Connecting and AM Antenna

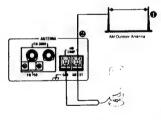
AM Loop Antenna



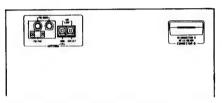




AM Outdoor Antenna



To receive AM radio broadcasts, you will have to connect an AM antenna to the Tape Deck/Tuner component.



Getting Started

An AM loop antenna is included with your system. Connect this antenna as follows:

- 1. Fasten the AM loop antenna to the antenna base.
- Connect one AM antenna wire to one of the AM LOOP terminals at the rear of the Tape Deck/Tuner component.
- Connect the remaining AM antenna wire to the other AM LOOP terminal.
- Adjust the loop antenna as needed to get the best reception.

If your AM broadcast reception is unsatisfactory, you should connect an AM outdoor antenna in addition to the loop antenna.

Important!! The AM loop antenna must be installed to receive AM broadcasts. Do not disconnect the loop antenna when installing an outdoor antenna.

- Install a single vinyl-covered antenna wire outdoors.
 The antenna wire should be about 16 to 40 feet (5 to 12 meters) long.
- Connect one end of the antenna to the AM loop terminal marked AM EXT.

Note: Except for the connection, make sure no uninsulated antenna wire touches the rear panel of the CA-MX1BK. Otherwise, you might not receive AM broadcasts.

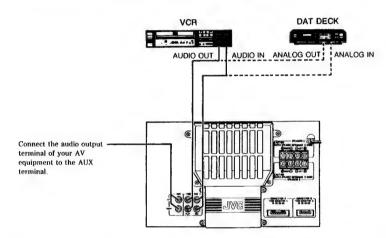
٠.

Getting Started

Connecting Other Components

The CA-MX1BK can also be connected to a Video Cassette Recorder (VCR), and a Digital Audio Tape (DAT) Deck.

Attach these components as shown below.



AC power connection

Caution: To prevent electric shock, turn all stereo components off before you install or remove power cords.

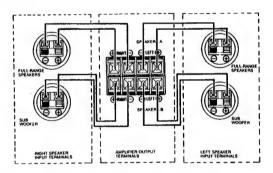
Important! Before you plug the power cord into an outlet, make sure all stereo components are connected correctly.

Plug the power cord on the back of the receiver into a $120~{\rm volt},~60~{\rm Hz}$ AC household electrical outlet.

Getting Started

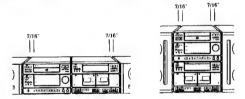
Connecting the Speakers

Each speaker has four terminals; two for the Full-Range speaker, and two for the Subwoofer speaker. Connect the speakers to the CD/Amplifier components as follows:



Laying Out the System

There are two ways to lay out the system: You can stack the CD/Amplifier on top of the Tape Deck/Tuner, or you can set the two components side-by-side. (Set the CD/Amplifier on the left and Tape Deck/Tuner on the right as you face them.)



Using the Amplifier

Controlling Sound with the SEA Function

1. Press the SEA button on the Amplifier.

The SEA indicator lights up.



Press the FREQUENCY button on the Amplifier to select one of the seven frequency ranges to work on.

The frequency selected changes with each press of the FREQUENCY button in this order (from lowest to highest):

 \rightarrow 63Hz \rightarrow 160Hz \rightarrow 400Hz \rightarrow 1kHz \rightarrow 2.5kHz \rightarrow 6.3kHz \rightarrow 16kHz \rightarrow (back to the beginning)



 Press the SEA LEVEL button (+ or -) on the Amplifier to set the level for the selected frequency range.

- Press the + button to increase sounds in the selected frequency range, and pressing the - button to decrease sounds in this frequency range.
- ♦ Repeat steps 2-3 for each frequency range.

Note: If you want to compare the new sound you have created with the way the system sounded before, press the SEA button on the Amplifier and listen to a selection of music. Then press the SEA button again to hear the new sound.



 Press the MEMORY button on the Amplifier to store your SEA pattern in memory.



Using the Power Switch

1. Press the POWER switch to turn on the CA-MX1BK.

When the POWER switch is not pressed and the power cord is plugged in, the stereo is in STANDBY mode and POWER STANDBY indicator lights. In STANDBY mode, the stereo uses a small amount of power (5 watts) for the clock, memory contents, and any timers which are set.

2. To disconnect power completely, unplug the power cord.

Adjusting the Volume Controls

Using the

Function

SEA

Volume

Turn the VOLUME knob to adjust the volume level of the speakers or headphones.



Turn the BALANCE knob to adjust the left-and-right sound balance in the speakers or headphones.

Twin Bass

Turn the TWIN BASS knob to adjust the output level of the Subwoofers. Turning this control toward MAX will boost the low frequencies.

You can think of the SEA function as an enhanced version of the conventional Bass and Treble knobs on most sound systems. Use it to alter the tone of the source (for example, CD, tape, or broadcast) by increasing or decreasing the levels of selected frequency ranges.

The total frequency range that the CA-MX1BK can reproduce (from the lowest-pitched sounds to the highest) is divided into seven sections: 63Hz, 160Hz, 400Hz, 1kHz, 2.5kHz, 6.3kHz, and 16kHz.

By making certain frequency ranges louder or softer, you can change the sound to suit your taste. You can also choose from six pre-programmed SEA settings.



Using the Amplifier

Using DAT and VCR

In addition to the CD Player, Tuner, and Cassette Tape Deck, the CA-MXIBK can also play a DAT, a VCR, and a Video Disk Player. To connect these sources, see "Connecting Other Components" on page 5.

Playing a Video Cassette

When a VCR is connected, the sound is heard through the speakers.



- 1. Put a video cassette in the VCR.
- 2. Press the VIDEO/DAT button on the Amplifier.
- 3. To operate the VCR, refer to its instruction manual.
 - You can operate a JVC VCR using the remote controller.
 See page 49 for more information.

Playing a DAT

1. Put a DAT cassette in the DAT deck.



- 2. Press the VIDEO/DAT button on the Amplifier.
- 3. To operate the DAT deck, refer to its instruction manual.
 - You can operate a JVC DAT using the remote controller.
 See page 49 for more information.

Using the Amplifier

Using an SEA Pattern

You can use the SEA pattern you created, or one of the six preprogrammed SEA patterns, each of which has its own sound characteristics.

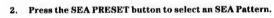
The pre-programmed SEA patterns are:

ROCK	Boosted low and high frequencies.
------	-----------------------------------

F CAR When creating tapes for use in a car stereo.

1. Press the SEA button on the Amplifier.

The SEA indicator light goes on.



Each press of the SEA PRESET button changes the pattern displayed in the following order:

- \rightarrow M (your pattern) \rightarrow A (ROCK) \rightarrow B (JAZZ) \rightarrow C (POPS)
- ➤ D (CLASSIC) ➤ E (HEADPHONE) ➤ F (CAR)
- ➤ (back to the beginning)

Selecting a Track to Play

Press the AUTO SEARCH buttons to scan through the track numbers.

Press the button to find tracks with decreasing numbers, and the button to find tracks with increasing numbers.

• If you press the AUTO SEARCH buttons when the CD Player is in the pause/stop mode, you will find the track you selected.

You can restart playback by pressing the PLAY/PAUSE button.



◆ If you press the AUTO SEARCH buttons during playback, you will find the track you selected. Playback restarts at the beginning of the selected track.

A red mark appears above the selected track number on the display.

Using the Remote Controller to Select a Track



There are three ways to search for a track with the remote controller:

Numeric keypad

AUTO SEARCH buttons | Hee | or | Hee |

MANUAL SEARCH buttons or

Using the Numeric Keypad

1. Press the CD 10KEY button on the Remote Controller.



2. Enter the track's number with the numeric keys.

- ◆ If the track you want to hear is the 8th track, press the 8 key.
- ◆ If the track you want to hear is the 15th track, press the +10 key and the 5 key.
- If the track you want to hear is the 27th track, press the +10 key twice and the 7 key once.

Note: If the track number is greater than 20, the red mark will not appear.

Using the CD Player



Starting Playback



1. Press the OPEN/CLOSE button on the CD Player.

The CD tray slides out.

Place a CD (with the label facing up) in the tray, and press the OPEN/CLOSE button again.

The tray slides back in.



Press the PLAY/PAUSE button on the CD Player, or the CD button on the Amplifier.

The CD Player begins playing the first track on the CD.

Stopping Playback and Ejecting the CD



- 1. Press the STOP/CLEAR button.
- 2. Press the OPEN/CLOSE button, and take the CD out of the tray.
- 3. Press the OPEN/CLOSE button again to close the tray.

Stopping and Restarting Playback



1. Press the PLAY/PAUSE button.

Playback stops temporarily.

Press the PLAY/PAUSE button again.

Playback restarts.



Displaying the Elapsed and Remaining Playing Time

Using the DISPLAY button, you can display the total time the CD (or current track) has been playing, and the amount of time that remains. This is useful in situations such as recording, when you need to know how long the track or CD has been playing, or the amount of time that remains on the track or CD.



Press the DISPLAY button to show the time you want.

There are four display times:

The total elapsed playing time since the beginning EACH

of playback of the current track

The time remaining until the end of the current EACH REMAIN

The total elapsed playing time since the beginning TOTAL

of playback of the CD

TOTAL REMAIN The time remaining until the end of the CD

The display changes each time you press the DISPLAY button.

For Example:



TOTAL REMAIN Display mode: 6th

Current track:

37 minutes, 48 seconds Total remaining time:

Using the CD Player

Using the Auto Search Buttons



Press the Auto Search 🕶 or 🗪 button on the Remote Controller. See "Selecting a Track to Play" on page 13.

Using the Manual Search Buttons



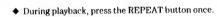
Controller to search for a certain part of the track.

Listening Repeatedly



Using the REPEAT button, you can play the entire CD or a selected track repeatedly.

Playing the Entire CD Repeatedly



The CD will play through the last track and then start over again. It will keep repeating until you cancel the repetition.

Playing a Selected Track Repeatedly

• During playback, press the REPEAT button twice.

The current track will play to the end and then start over again. It will keep repeating until you cancel the repetition.

Cancelling Repetition

Press the REPEAT button again.

Each track will play to the end and not repeat

Checking the Program

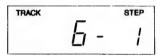
You can check the programmed sequence of playback to determine which tracks will be played in which order.

Note: The program contents cannot be displayed during playback. Press the STOP/CLEAR button if the CD Player is in play mode.



1. Press the AUTO SEARCH button once.

The first track in the program is displayed, along with its sequence number.

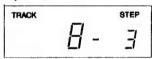


For example: this display shows that the 6th track will be played first.



2. Press the AUTO SEARCH button repeatedly.

The rest of the tracks in the program are displayed, along with their sequence numbers.



For example: this display shows that the 8th track will be played third.

Listening to Programmed Tracks Repeatedly



 Press the REPEAT button to listen to the programmed sequence of playback repeatedly



2. Then press the PLAY/PAUSE button.

Using the CD Player

Programming Your Own Playback Sequence



You can program the CD Player to play back the tracks of a CD in any order.

1. Press the STOP/CLEAR button on the CD Player.

This puts the CD Player in STOP mode and clears existing programs from the memory.



- 2. Press the PROGRAM button on the Remote Controller.
- 3. Press the CD 10KEY button on the Remote Controller.

Pressing the CD 10KEY button places the numeric keys in CD mode.



- Enter the track numbers with the numeric keys in the order you want them played back.
 - ◆ For example: if the first three tracks you want to hear played back are tracks 17, 5, and 10, press the +10 key and the 7 key (for track 17). Then press the 5 key (for track 5) and the 10 key (for track 10).
 - ◆ You can program up to 32 tracks.

If the total time of all the programmed tracks is 100 minutes or more, the display will show "—:—" (since the highest time the display can show is "99:59").



 Press the PLAY/PAUSE button on the CD Player, or the CD CONTROL
 button on the Remote Controller.

Playback begins with the first track in the program.

To add a track to the program during playback, enter the track number with the numeric keys on the Remote Controller.

The new track is added to the end of the program.

Updating the Entire Program

You can replace the old program with a new one.



1. Press the STOP/CLEAR button on the CD Player.

This clears the programmed sequence of playback from memory.

To clear the program during playback:

- Press the STOP/CLEAR button twice (once to stop, twice to clear the program from memory)
- Press the STOP/CLEAR button after pressing the STOP button on the Remote Controller.



2. Press the PROGRAM button on the Remote Controller.



3. Press the CD 10KEY button on the Remote Controller.

Pressing the CD 10KEY button puts the numeric keys in CD mode.



 Enter the track numbers with the numeric keys in the order you want them played back.

Cancelling Programmed Playback

1. Press the PROGRAM button on the Remote Controller.

This puts the CD Player in normal playback mode. The tracks will play back in their regular order.

Note: When Tuner is selected as the source, CD OFF is displayed, and only the OPEN/CLOSE disk tray and PLAY/PAUSE buttons can be used. To use other buttons, press the CD button on the Amplifier or the PLAY/PAUSE button on the CD Player first.

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Using the CD Player

Updating the Program



You can add and delete tracks from the program.

Note: The program contents cannot be updated during playback. Press the STOP/CLEAR button if the CD Player is in play mode.

Adding Tracks to the Program



1. Press the CD 10KEY button on the Remote Controller.

Pressing the CD 10KEY button puts the numeric keys in CD mode.

Enter the track numbers with the numeric keys in the order you want them played back.

The track numbers you enter are added to the end of the program.

Deleting Tracks from the Program



 Press the AUTO SEARCH buttons to select the track to be deleted from the program.

A red mark is displayed above the track that is to be deleted.



- 2. Press the CANCEL button on the Remote Controller.
 - The track number with the red mark above it is deleted from the program.
 - If the CANCEL button is pressed and no track has been selected for deletion, the last track in the program is deleted.

Stopping Playback and Ejecting the Tape



- 1. Press the STOP button on the tape deck.
- Press the EJECT on the corner of the cassette holder to open and remove the tape from the cassette holder.
- Shut the cassette holder.

Note: If the system is turned off while a tape is playing, you may not be able to eject the tape. You will need to turn the system back on and press the EJECT on the cassette holder to open it.

Stopping and Restarting Playback



1. Press the PAUSE button on the tape deck.

Playback of the tape in deck B stops temporarily.

Note: The PAUSE button only applies to deck B



Press the ⊲ or ⊳ button.

This restarts playback of the tape in deck B.

Changing the Playback Direction



1. To change the playback direction during playback, press the d or button.

The other side of the tape will now play.



2. To change the playback direction without starting playback, press the ⊲or > button while also pressing the Stop □ button.

This allows you to set the tape direction for a timed recording.

Using the Tape Deck

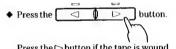
TaPe dEcK

Playing a Tape



The tape deck has an Auto Tape Select feature, which can tell the difference between various types of cassette tape. It can distinguish between Normal (Type I), CrO, -High Position (Type II), and Metal (Type IV). After it determines the tape type, bias and equalization are automatically set for the tape.

- Press the EJECT on the corner of the cassette holder.
- 2. Insert a cassette and shut the cassette holder.
- 3. If the tape was recorded with Dolby B noise reduction, press the DOLBY B NR button. The indicator light will go on.
- 4. Start playback by either of the following methods:



Press the button if the tape is wound mostly on the left side.



Press the \square button if the tape is wound mostly on the right side.



• Press the TAPE button on the Amplifier.

Note: When cassettes are in both decks A and B, deck B starts first.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Searching for Beginning of the Next Track

- ◆ If the tape is travelling in the forward direction, press the □ playback button simultaneously with the □ fast-winding button.
- ◆ If the tape is travelling in the reverse direction, press the playback button simultaneously with the fast-winding button.

Note: The deck that is playing will stop if the music scan function is used on the other deck.

The music scan function is not effective:

- ♦ When the track being scanned contains an area of low sound level.
- When the blank between tracks is short.
- When there is noise, for example, a hum between tracks.

Recording a Tape

Recording Notes:







- ◆ To reduce hiss, use the Dolby B noise reduction system. Press the DOLBY B NR button. The indicator light will go on.
- To record on sides A and B continuously, press the REV. MODE button. The indicator light will go on.

The source will be recorded to the end of side A. Then the tape will reverse direction and recording will continue on side B.

- ◆ The recording level is set automatically.
- If you don't want to hear the system during recording, turn the VOLUME knob on the Amplifier down.
- If the small tabs on cassette tapes to prevent accidental erasure have been removed, the contents of the tape cannot be recorded over. To record, cover the holes with adhesive tape.
- If you are recording an AM broadcast and you hear interference, move the BEAT CUT switch on the back of the stereo from Position 1 (the normal mode) to Position 2.

Using the Tape Deck

Fast-Winding the Tape

Press the ← or ► buttons on the Tape Deck to advance the tape rapidly in the direction of the arrows.

Listening to Tape Continuously

You can set the tape deck up to play both sides of the tapes in decks \boldsymbol{A} and \boldsymbol{B} repeatedly.

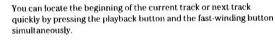


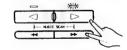
- 1. Insert cassettes into decks A and B.
- 2. Press the REV. MODE button of deck B.
 - Deck B will be placed in reverse mode, which means that it will play all of one side of the tape and then all of the other side.
 - ◆ Deck A is automatically in reverse mode.
- 3. Press the ⊲ or ⊳ button of the deck to be started first.
 - Now both sides of both tapes will play repeatedly.
 - If deck B is not placed in reverse mode, all of the tape in deck A will play, but only one side of the tape in deck B will play.
 - If you press the TAPE button on the Amplifier, deck B will start first.



Music Scanning

The music scan function will detect the blank segments between tracks. The blank should be about 4 seconds long for the music scan to be effective.





Searching for Beginning of the Current Track

- If the tape is travelling in the forward direction, press the bplayback button simultaneously with the
 ← fast-winding button.
- If the tape is travelling in the reverse direction, press the

 playback button simultaneously with the

 fast-winding button.

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Dubbing a Tape

You can make a tape-to-tape recording at either normal or high speed. Recording from another tape is called dubbing.

Normal-Speed Dubbing

- Insert the cassette for playback into deck A and the cassette for recording into deck B.
 - Deck A is used for playback only, and deck B is used for both recording and playback.
 - The type of tape (Normal, CrO₂, or Metal) used for recording must be the same as that used for playback.
 - To dub a tape which was recorded with Dolby B noise reduction, set the DOLBY B NR button on the Tape Deck and the SEA button on the Amplifier to the OFF position.



Press the Pause " button while simultaneously pressing the REC/REC MUTE button on deck B.

This places deck B in REC/PAUSE mode.

- Press the PLAY button

 or

 (depending on which side of
 the tape you want to record from) on deck A.
- 4. Press the PLAY button o or ▷ (depending on which side of the tape you want to record onto) on deck B.
 - ◆ The tape-to-tape recording starts.

Note: You cannot listen to another source during normal-speed dubbing.



◆ To stop normal-speed dubbing before the end of either the playback or record tape, press the Stop □ buttons on decks A and B.

Using the Tape Deck

Recording from Various Sources

1. Insert a cassette for recording into deck B.

Deck A is used for playback only, and deck B is used both for recording and playback.

2. Select the source you are recording from:



3. Press the Pause II button on the Tape Deck while simultaneously pressing the REC/REC MUTE button.

This puts the tape deck in REC/PAUSE mode.

- 4. Start the source to be recorded.
- □ D D
- 5. Press the play button on deck B to start recording.



6. To stop recording, press the Stop D button.



 To stop recording temporarily, press the Pause II button on deck B.



3. To restart recording again, press the PLAY button ⊲ or ⊳.

This way you can avoid recording unwanted portions of the source such as commercials over a broadcast.

Note: It may be unlawful to record or playback copyrighted material without the consent of the copyright owner.

Erasing a Tape

1. Insert the tape to be erased into deck B.

- ◆ To erase music on both sides, press the REV. MODE button on the
- 2. Press the Pause II button while simultaneously pressing the REC/REC MUTE button.

This puts the deck in REC/PAUSE mode.

3. Press the TAPE button on the Amplifier.

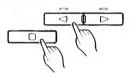
4. Press the o or > button (depending on which side of the tape you want to erase) on deck B.

The erasure of the tape begins.

- ◆ Small tabs are provided on cassette tapes to prevent accidental erasure. If these tabs have been removed, the contents of the tape cannot be erased or recorded over.
- ◆ To record or erase, cover the holes with adhesive tape. (The tab in the upper left corner is the tab for the side facing you, and the other tab is for the opposite side.)



High-Speed Dubbing



- 1. Insert the cassette for playback into deck A and the cassette for recording into deck B.
 - ♦ To change the playback direction of deck A, hold down the Stop □ button and press the < or > buttons.

2. Press the HIGH SPEED DUBBING button on the Tape Deck.

◆ The high-speed tape-to-tape recording starts.

Note: You can listen to another source while high-speed dubbing is in progress.

◆ To stop high-speed dubbing before reaching the end of either the playback or record tape, press the Stop D button on deck B.

Note: If a nearby television is on during high-speed dubbing, a beeping noise may be recorded onto the record tape. Turn off the television or move it farther away.

Press the Stop D button on deck A when you hear the end of a track to record from many different tapes (for example, to create a "Greatest Hits" tape)

Deck A stops playback, and deck B automatically creates about a 4 second blank, then pauses.

Note: If you don't want this blank, press the Pause 😝 button on deck B before pressing the Stop D button.

4. Put another tape into deck A.

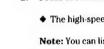
5. Press the HIGH SPEED DUBBING button on the Tape Deck.

The high-speed dubbing restarts.

6. To record tracks from other tapes, repeat steps 3 - 5.

Note: The SEA Function is not effective during high-speed dubbing.

















Recording CD Tracks in Auto-Edit Mode

In Auto-Edit mode, tracks from the CD will automatically be selected to determine which tracks should go on side A of the tape and which should go on side B.

The selection is based on the lengths of the tracks and the length of the tape. This ensures a proper "fit" of the tracks recorded on the tape. It prevents a track from being cut off when the end of the tape is reached.

- 1. Insert the cassette for recording in deck B.
 - Press the REV. MODE button on the Tape Deck if you want to record on both sides of the cassette.
- 2. Put the CD in the CD Player.

Using the Tape Deck

See "Starting Playback" on page 12 for instructions on how to load a CD.



3. Press the STOP/CLEAR button on the CD Player.



- Press the A. EDIT button on the CD Player to tell the system the length of the tape in the Tape Deck.
 - ◆ The tape length most suitable for CD recording is displayed first.
 - Each time the A. EDIT button is pressed, the next standard tape length blinks, in this order;
 - ightharpoonup C46
 ightharpoonup C54
 ightharpoonup C60
 ightharpoonup C74
 ightharpoonup C90
 ightharpoonup (back to the beginning)
 - You can also enter a non-standard tape length from the Remote Controller using the numeric keys.

For example: to enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller, then press the + 10 (11) key four times and the 10 key once.

Direct Recording from the CD Player

The system sets recording levels automatically.

- 1. Insert the cassette for recording into deck B.
- 2. Put a CD in the CD Player.
 - See "Starting Playback" on page 14 for instructions on how to load a CD



- 3. Press the CD REC START button on the Tape Deck.
 - The CD Player and the Tape Deck are activated, and recording begins with the first track of the CD.
 - ◆ To stop direct recording, press the STOP button on deck B or the STOP/CLEAR button on the CD Player.



 To fade out the CD gradually at the end of the tape, press the FADE button on the CD Player.

The volume level of the last track on the tape is lowered gradually to 0. This makes a nice ending to your tape and prevents an abrupt cut-off of music if the tape ends before the CD.

To cancel the fade-out function during recording, press the FADE button again on the CD Player.

The fade-out function operates in both forward and reverse directions.

- When the end of the tape is reached, the tape is rewound to the the beginning of the last track.
- The last track is played back again from the CD Player and recorded again on the tape. This time the sound level is reduced gradually at the end.



Recording CD Tracks in Programmed-Edit Mode

In Programmed-Edit Mode, you decide which tracks from the CD will be recorded, and in what order.

1. Insert the cassette for recording in deck B.

 Press the REV. MODE button on the Tape Deck if you want to record on both sides of the cassette.

2. Put the CD in the CD Player.

See "Starting Playback" on page 12 for instructions on how to load a CD.



3. Press the STOP/CLEAR button on the CD Player.



- Press the P. EDIT button on the CD Player to tell the system the length of the tape in the Tape Deck.
 - Each time the P. EDIT button is pressed, the next standard tape length blinks, in this order:

$$ightharpoonup C46
ightharpoonup C54
ightharpoonup C60
ightharpoonup C74
ightharpoonup C90
ightharpoonup (back to the beginning)$$

 You can enter a non-standard tape length from the Remote Controller using the numeric keys.

For example: to enter a tape length of 50 minutes, press the CD 10KEY button on the Remote Controller. Then press the +10 (11) key four times and the 10 key once.



5. Press the SIDE A/B button on the CD Player.

- This tells the system that you will be choosing tracks to be recorded on side A of the tape.
- The length of time for one side of the tape is displayed. This is half of the total tape length. The total time for the tracks you choose for each side cannot exceed this time.
- If you do not press the SIDE A/B button, side A is automatically selected.

 $\mbox{\bf Note:}$ During recording in the Programmed-Edit Mode, do not operate the CD Player.

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Using the Tape Deck



5. Press the SIDE A/B button on the CD Player.

- The CD Player calculates which tracks should be placed on side A and which should be placed on side B, based on the lengths of the tracks and the length of the tape. The number of each track selected for placement on side A or B blinks on the display.
- If there are track numbers that do not blink after you have pressed the SIDE A/B button, this means that the tape has more room. To add these tracks, use the numeric keys on the Remote Controller.
- If you do not press the SIDE A/B button, the CD Player automatically decides which tracks should be placed on sides A and B about 4 seconds after the A. EDIT button is pressed.

Note: Up to 16 tracks can be allocated for each side of the cassette.



6. Press the CD REC START button on the Tape Deck.

- The tape is automatically rewound to the beginning of side A, a 15 second blank is created, and then recording begins.
- When deck B is set in the Reverse Mode, after the last track is recorded on side A, the tape deck high-speed-erases to the end of side A. Then it changes direction to side B and begins recording the remaining tracks.



- ◆ To stop recording, press the Stop □ button on deck B, or press the STOP/CLEAR button on the CD Player.
- After the last track has been recorded, a 4 second blank is created.
 Then the tape stops automatically.

 $\mbox{\bf Note:}$ During recording in the Auto-Edit Mode, do not operate the CD Player.

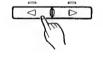
Recording With the SEA Function

The SEA Function is used to alter the tone of the source by increasing or decreasing the levels of selected frequency ranges.

You can use this function to control the way the tracks from the CD will sound when they are recorded on the tape.

- 1. Insert the cassette for recording in deck B.
- 2. Press the SEA button on the Amplifier.
 - ◆ The indicator light will go on.
 - To create the desired sound, see "Controlling Sound with the SEA Function" on page 9.

3. Press the or button on the Tape Deck while holding down



the REC/REC MUTE button.

Recording starts.

SEA Function Notes

- ◆ The SEA Function cannot be used during high-speed dubbing.
- If the source you are recording from is a cassette in deck A that was created using Dolby B noise reduction, the noise reduction effect is lost when you dub using the SEA Function.
- To keep the noise reduction effect of the cassette in deck A, use either of these methods:
- High-speed dubbing.
- Normal speed dubbing, with the SEA Function off and the DOLBY B NR button set to OFF.



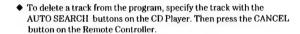
Using the Tape Deck

6. Press the CD 10KEY button on the Remote Controller.

This places the numeric keys in CD Mode.

Enter the numbers of the tracks you want recorded on one side of the tape.

- Tracks on a CD assigned numbers 32 or greater cannot be entered in the program.
- If the length of a track exceeds the remaining tape length, the time indication blinks on the display. Choose a different track number.



 To add a track to the program, enter the track's number with the numeric keys on the Remote Controller.



If you also want to record on the other side of the tape, press the SIDE A/B button on the CD Player and repeat step 7.

If you only want to record on one side of the tape, skip this step.



- 9. Press the CD REC START button on the Tape Deck.
 - The tape is automatically rewound to the beginning of side A, a 15 second blank is created, and then recording begins.
 - After the last track is recorded on side A, the tape deck high-speederases to the end of side A. It changes direction to side B, and begins recording the remaining tracks on side B.



- To stop recording, press the STOP button on deck B, or press the STOP/CLEAR button on the CD Player.
- After the last programmed track has been recorded, a 4 second blank is created. Then the tape stops automatically.

Note: The program cannot be edited during recording. To change the program, press the STOP/CLEAR button on the CD Player and begin with step 4 of this procedure.





The clock will be displayed even when the system is turned off. Pressing the TUNING/TIMER/DIMMER buttons (UP or DOWN) will switch between two brightness levels for the clock.

Setting the Clock

1. Press the CLOCK ADJUST button on the Tuner.

The hours digits blink.



Press the TUNING/TIMER/DIMMER button (UP or DOWN) to set the hours digit.

- Press the UP button to increase the hour, and press the DOWN button to decrease the hours.
- To enter a new hour digit, press the CANCEL button and repeat step 2.
- 3. Press the MEMORY button on the Tuner.

This sets the hour portion of the time.

◆ The minutes digits will blink.



- It's a good idea to set the minutes digits one minute ahead. Then
 you can start the clock when it reaches the set time exactly
 (according to the correct time from the TV, radio, or telephone).
- To enter a new minute digit, press the CANCEL button and repeat step 4.
- 5. Press the MEMORY button.

The clock starts as soon as you press the MEMORY button.

Caution: If there is a power failure, or if you unplug the stereo, the clock time will be lost. Repeat steps 1-5 when power is restored.



Using the Tape Deck

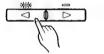
Creating a Blank During Recording



Use the Record Muting function when you do not want to record a section of the source.

 Press the REC/REC MUTE button on the Tape Deck at the beginning of the section you don't want to record.

A blank of about 4 seconds is created on the cassette, and then the deck pauses.



- 2. To start recording again, press the or button.
 - To create a blank of more than 4 seconds, hold down the REC/REC MUTE button. When you release this button, the deck pauses.
 - When the source you are recording from is the CD Player and the CD REC START button is used, the REC/REC MUTE button will not function.

Recording with the Timer

The CA-MX1BK can be set up to record a tape automatically. This is especially useful for recording broadcasts when you are not around, or late at night when you are asleep.

- 1. Insert a cassette for recording into deck B.
- Set the timer, by following the steps in "Setting the Timers" on page 37.
- 3. Select one of the following sources:

TUNER TIMER REC

-- TIMER REC

Records TUNER preset stations Records from the source selected before turning off the system

Using the Tuner

Presetting Stations in Memory

You can store up to 40 of your favorite radio stations (FM and ΛM) in memory, giving you quick, easy access to the stations.



 Select a band by pressing either the FM or AM button on the Tuner.



Press the TUNING/TIMER/DIMMER button (UP or DOWN) to tune in a station.



3. Press the MEMORY button on the Tuner.

The "MEMORY" indicator on the Tuner display blinks for 5 seconds.



- Press the PRESET button (◄ or ►) on the Tuner to assign a number (1~40) to the station, or enter a number (1~40) on the Remote Controller's numeric keypad.
 - If you press another button by mistake, press the MEMORY button again and repeat step 4.
 - If the "MEMORY" indicator has stopped blinking, press the MEMORY button again and repeat step 4.
 - If the preset number you choose already has a station assigned to it, the old station will be replaced by the new one.



5. Press the MEMORY button again.

This stores the station in memory, with the preset number $(1 \sim 40)$ you chose in step 4.

Repeat steps 1-5 for each station you want to store in memory with a preset number.

Caution! If the system is unplugged or if a power failure occurs, the preset stations stored in memory may be lost.

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Using the Tuner

Listening to Broadcasts (FM and AM)

The Tuner of the CA-MX1BK can receive FM and AM broadcasts. Stations can be tuned in manually, automatically, or from preset memory storage.

Manual Tuning



 Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.



- Press the TUNING/TIMER/DIMMER button (UP or DOWN) to tune in a station.
- Hold down the TUNING/TIMER/DIMMER button to change the frequency rapidly, then tap the button to set the frequency precisely.

Automatic Tuning



 Select the broadcast band you want to tune in by pressing the FM or AM button on the Tuner.



- Hold down the TUNING/TIMER/DIMMER button (UP or DOWN) for a moment, and then release the button.
 - When a station is tuned in, the TUNED indicator lights up.

Note: The Tuner will tune in the nearest strong station.

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Setting the Timers

The CA-MX1BK has three timers that are used to turn the system on and off automatically:

TIMER1 TIMER2 DAILY

With the timers you can make tape recordings of broadcasts, CD's, or tapes when you're not around. You can also play these music sources at specified times without recording them.

- ◆ Use TIMER1 and TIMER2 to record a radio broadcast when you're not home, or late at night when you're asleep.
- Use the DAILY timer to record a broadcast that occurs at the same time every day.
- ◆ The procedure for setting TIMER1, TIMER2, and the DAILY timer is the same. You need to tell the system:
- The name of the timer (TIMER1, TIMER2, or DAILY).
- The time the timer should turn the system on.
- The time the timer should turn the system off.
- The source the timer should turn on (Tuner, CD, or Tape).
- The volume level that should be used during recording or playback.

When you have given the system this information, it will know which source to turn on, when to turn it on and off, and how loud to play

during this time period. Note: The clock must be set to the correct time for the timers to be effective. See "Setting the Clock" on page 35.

Using the Tuner

Cancelling Preset Stations



1. Press the CANCEL button on the Tuner.

The "CANCEL" light on the Tuner display blinks for 5 seconds.



Press the PRESET button (- or -) on the Tuner to select the preset station you want to cancel.

If the "CANCEL" light has stopped blinking, press the CANCEL button again and repeat step 2.

3. Press the CANCEL button again.

The preset station will be cancelled.

Tuning in Preset Stations

- ◆ Press the PRESET button (→ or ►) on the Tuner to select the preset station you want. The preset station numbers are displayed sequentially each time you press the PRESET button.
- ◆ You can also select a station by entering its preset number on the Remote Controller's numeric keypad.

FM Reception Modes

There are two FM reception modes: AUTO and MONO.

AUTO: Stations are tuned in with either STEREO or MONO, depending on the strength of the FM signal.

MONO: Stations are tuned in with MONO only. This will reduce interference noise of weak stations and make the reception sound better.



- Press the FM MODE/MUTE button on the Tuner to switch between the AUTO and MONO reception modes.
- Press the FM MODE/MUTE button on the Remote Controller to the AUTO mode to receive the station in stereo.
 - If a stereo broadcast is received when the FM band is selected, the "STEREO" light will be displayed on the Tuner.
 - ◆ If the FM Reception Mode is MONO, the "STEREO" light will not be displayed.

CA-MX1LB

Using the Timers

Selecting the Source



 Press the TUNING/TIMER/DIMMER (UP) button to select a source.

Repeatedly pressing the UP button displays the sources in the following order:

Display	What it means
	Plays from whichever source was used just before turning off the system
TUNER	Plays FM or AM broadcast
TUNER TIMER REC	Records FM or AM broadcast
CD	Plays a CD
TAPE	Plays a tape
TIMER REC	Records from whichever source was used just before turning off the system



Note: If you choose an FM or AM radio station as the source, select the station by pressing the PRESET (►) button on the Tuner.

Press the MEMORY button. This stores the source to play or record in memory.



Note: To change your selection, press the CANCEL button and enter a new value.

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Using the Timers

Choosing a Timer

Press the TIMER1, TIMER2, or DAILY button on the Tuner to select a timer. This puts the system in the Timer Setting mode. The information that the system expects next will blink on the display.

Setting the Start Time



 Press the TUNER/TIMER/DIMMER buttons, as in step 1, to set the minute.

The DOWN button makes the hour number decrease, and the UP button makes the hour number increase.



. Press the MEMORY button.

This stores the hour portion of the start-time in memory.

- 3. Press the TUNER/TIMING/DIMMER buttons, as in step 1, to set the minute.
- 4. Press the MEMORY button.

This stores the minute portion of the start-time in memory.

Setting the Stop Time



 Press the TUNING/TIMER/DIMMER buttons to set the hour that the system will turn off.

The DOWN button makes the hour number decrease, and the UP button makes the hour number increase.



2. Press the MEMORY button.

This stores the hour portion of the stop-time in memory.

- 3. Press the TUNING/TIMER/DIMMER buttons to set the minute.
- 4. Press the MEMORY button.

This stores the minute portion of the stop time in memory.

Caution! Do not operate the remote controller when you are programming the timer.

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Using the Timers

Resetting the Timers



To reset a timer, press the button (TIMER1, TIMER2, or DAILY) on the Tuner twice. Now the timer is set again and will use the same start-time, stop-time, source, and volume level as before.

Setting the Wake-Up and Sleep Timers

You can set a timer so it turns on to wake you up or turns off when you go to sleep.

The wake-up timer serves as an alarm clock. It turns the system on

after a programmed time lapse and plays the source that was used before the system was turned off. You can set a wake-up time from

Setting the Wake-Up Timer



1. Press the POWER switch on the Amplifier so it is off.

between 5 minutes and 12 hours.



2. Press the WAKE UP/SLEEP button on the Tuner.

This tells the system that you are going to set the wake-up time.

 Press the WAKE UP/SLEEP button repeatedly until the desired wake-up time appears.

Each time you press the WAKE UP/SLEEP button, the wake-up time lapse changes in the following order:

- \triangleright 0:05 \triangleright 0:10 \triangleright 0:15 \triangleright 0:30 \triangleright 0:45 \triangleright 1:00 \triangleright 1:30 \triangleright 2:00 \triangleright 3:00 \triangleright (every hour) \triangleright 12:00 \triangleright (back to the beginning)
- If you make a mistake, press the CANCEL button on the Tuner and enter a new wake-up time with the WAKE UP/SLEEP button.
- The wake-up timer has priority over TIMER1, TIMER2, and the DAILY timer.

This means that if the start-time for one of the timers occurs before the wake-up time, the system will wait until the wake-up time to turn on.

Note: If CD is the source that will be used, playback begins with the first track.

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Using the Timers

Setting the Volume



Press the TUNING/TIMER/DIMMER up button to select a volume level.

Repeatedly pressing the UP button displays the volume levels in the following order:

Display	What It Means
Vol — —	Volume set to the level used before shut the power off
Vol — 0	Volume off
Vol — A	Volume barely on
Vol — B	Volume at 1/4 power
Vol C	Volume at 1/3 power

R

2. Press the MEMORY button.

This stores the volume level for timed playback or recording in memory. To change your selection, press the CANCEL button and enter a new value.

Pressing the Timer Button



This stores the timing information in memory. The timer you chose should light on the display.

Note: If the timer light does not light, the timer was not set properly, and you need to set the start time again.

Turning the System Off



Press the POWER button on the Amplifier to turn the system off.

- The system is now programmed to turn on at the preset start-time, and play or record until the stop-time.
- It will record or play the preset source at the preset volume level until the stop-time is reached.
- If you turn the system on before the start-time, the timer will still operate as programmed at the start-time.

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Using the Timers

Checking the Remaining Time

After setting the wake-up or sleep timer, you can check the time remaining until the system turns on (wake-up time) or shuts off (sleep time).



Press the WAKE UP/SLEEP button.

The remaining time is displayed for 5 seconds. Then the clock time appears again.

Adding More Time

If you want more time before the wake-up timer turns the system on (or the sleep timer turns the system off), follow these steps:



1. Press the WAKE UP/SLEEP button.

The remaining time is displayed for 5 seconds. Then the clock time appears again.

- Press the WAKE UP/SLEEP button again before the clock time is displayed.
 - Keep pressing this button until the desired additional time is reached.
 - ◆ The added-time will be displayed in the following order:

Now the system will wait until the added amount of time until turning on or shutting off.

Cancelling the Time Setting



If you decide you don't want the system to wake you up or play music while you fall asleep, you can turn these timers off.

 To cancel the wake-up timer, press the POWER button on the Amplifier.

This turns the power on.

To cancel the sleep timer, press the POWER button on the Amplifier.

This turns the power off.

A-MX1LB

Using the Timers

Setting the Sleep Timer

The sleep timer is used to turn off the system after a specified time lapse. With this timer you can fall asleep listening to music, knowing that the system will shut off automatically and not stay on all night. You can set the sleep timer to turn the system off from between 5 minutes and 2 hours



- 1. Press the POWER switch on the Amplifler so it is on.
- 2. Start the source you want to listen to.



3. Press the WAKE UP/SLEEP button on the Tuner.

This tells the system that you are going to set the sleep time.

 Press the WAKE UP/SLEEP button repeatedly until the desired sleep time appears.

Each time you press the WAKE UP/SLEEP button, the sleep time lapse changes in the following order:

- \triangleright 0:05 \triangleright 0:10 \triangleright 0:15 \triangleright 0:30 \triangleright 0:45 \triangleright 1:00 \triangleright 1:30 \triangleright 2:00 \triangleright (back to the beginning)
- If you make a mistake, press the CANCEL button on the Tuner and enter a new sleep time with the WAKE UP/SLEEP button.

The system will now turn off after this time lapse.

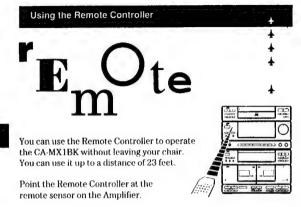
 The sleep timer has priority over TIMER1, TIMER2, and the DAILY timer.

This means that if the stop-time for one of the timers occurs before the sleep time, the system will wait until the sleep time before turning itself off. **Note:** When the Tuner is Selected as the source, and CD OFF is displayed, only the OPEN/CLOSE and PLAY buttons on the Remote Controller can be used.

To use other buttons on the Remote Controller (for programming and other operations), press the CD button on the Amplifier or the CD PLAY button on the Remote Controller first.

Function Button(s) To Use Turn power on or off Amplifier Adjust volume level Lower volume level gradually..... Listen to DAT or VCR Turning SEA Function on or off Selecting a frequency range for the SEA Function ... Setting a SEA level Using a SEA pattern..... **CD Player** Open and close the CD tray **O** Play a CD Stop playback of a CD Place numeric keys in CD mode..... Select track number Scanning music Check program contents..... (HI 1HI) Change a program Fast forwarding/rewinding (C) Program playback order Cancelling a program

Note: + indicates pressing both buttons simultaneously.



Installing Batteries

Operating the Remote

Controller:



1. Remove the battery compartment lid.

Press the lid and slide it in the direction of the arrow.



2. Insert the batteries.

Use two AAA size batteries. Make sure the + and - polarities on the batteries and compartment are the same.



3. Attach the lid.

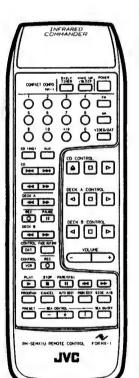
Press the lid and slide it in the direction of the arrow.

Note: Batteries installed incorrectly may burst or leak. Pay attention to the following:

- When the Remote Controller is not in use for a long period of time, remove the batteries.
- ◆ Do not mix old and new batteries.
- Do not mix batteries of different types, even if their shapes are the same.
- When batteries become weak, the operating distance of the Remote Controller is greatly reduced and you will need to replace the batteries.

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Using the Remote Controller



VCR
First select VCR mode
Recording
Play a tape
Stop playback
Stop recording or playback temporarily
Rewind the tape
Fast forwarding
Select a track number for playback $\dot{O} \sim \dot{O}$, \dot{O}

- When using the remote controller to operate a VCR, point the controller at the VCR.
- The numeric keys may have different functions depending on the JVC model VCR you have. See your VCR's manual for operating instructions.

DAT

First select DAT mode
Recording
Play a tape
Stop playback
Stop recording or playback temporarily
Rewind the tape
Fast forwarding
Select a track number for playback $\dot{\mbox{O}} \sim \dot{\mbox{O}}$, $\dot{\mbox{O}}$

- When using the remote controller to operate a DAT, point the controller at the DAT.
- The numeric keys may have different functions depending on the JVC model DAT you have. See your DAT's manual for operating instructions.

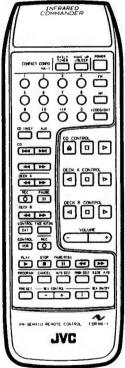
Using the Remote Controller

Function

Button(s) To Use

Tape Deck

(Press buttons corresponding to the deck being used, either deck A or B)



Play a tape in forward direction Play a tape in reverse direction Stop playback temporarily Stop playback Fast forwarding or fast rewinding	
Search for beginning of next track while in forward direction	▶+⊞
Search for beginning of next track while in reverse direction	→ + →
in forward direction	P + 🖼
in reverse direction	
Tuner Selecting Tuner mode / Selecting a band Presetting stations in memory Selecting a preset station	Ö ~ Ö,Ö O ~ Ö,Ö O ~ Ö,Ö
Timers Setting/resetting the DAILY timer Setting the wake-up/sleep timer	

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JVC

SERVICE MANUAL

COMPACT STEREO COMPONENT SYSTEM

CA-MX1BK MODEL NO. CA-MX1LBK

Supplement

This supplement contains additional information of the specifications of CA-MX1BK/LBK, AX-MX1BK/LBK, DR-MX1BK/LBK since there is lack of the information in the original service manual.

Specifications

CD / Amplifier Component

 $10-7/8 \times 6-3/4 \times 12-3/8$ inches Dimensions

 $(275 \times 170 \times 314 \text{ mm})$

15.0 lbs (6.8 kg) Weight

Amplifier

Output Power Main (SPEAKERS A):

30 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz

Subwoofer (SPEAKERS B):

20 watts per channel into 3 ohms at 80 Hz with 0.9 % total hormonic distortion.

Total Harmonic Distortion

at Half-Rated Power

Input Sensitivity/Impedance

(1kHz) VIDEO/DAT, AUX 300mV/40k ohms

SEA Center Frequencies 63, 160, 400, 1k, 2.5k, 6.3k, 16kHz

SEA Control Range ± 10dB

Compact Disc Player

Dynamic Range (1kHz) 90dB

Signal-to-Noise Ratio 100dB

5Hz ~ 20kHz Frequency Response

Wow and Flutter Unmeasurable Tape Deck / Tuner Component

Dimensions $10-7/8 \times 6-3/4 \times 10-3/4$ inches

 $(275 \times 170 \times 273 \text{ mm})$

Weight 7.3 lbs (3.3 kg)

Tape Deck

Metal: 30 ~ 17,000Hz Frequency Response

30 ~ 16,000Hz CrO₂: Normal: 30 ~ 15,000Hz

Wow and Flutter

(WRMS / DIN) 0.08% / 0.22%

FM Tuner

87.5 MHz ~ 108.0 MHz Tuning range

Usable Sensitivity

(IHF-A Weighted / DIN)

 $0.95 \mu V/75$ ohms (10.8dBf) Signal-to-Noise Ratio

MONO (at 85dBf) 80dB/72dB STEREO (at 85dBf) 73dB/64dB

AM Tuner

Tuning range

MW

	Area	Channel Space	
		9 kHz	10 kHz
	Continental Europe, U.K., Australia	522 kHz ∼ 1629 kHz	
	Other Area	531 kHz ∼ 1602 kHz	530 kHz √ 1600 kHz

LW (CA-MX1LBK)

144 kHz ~ 353 kHz

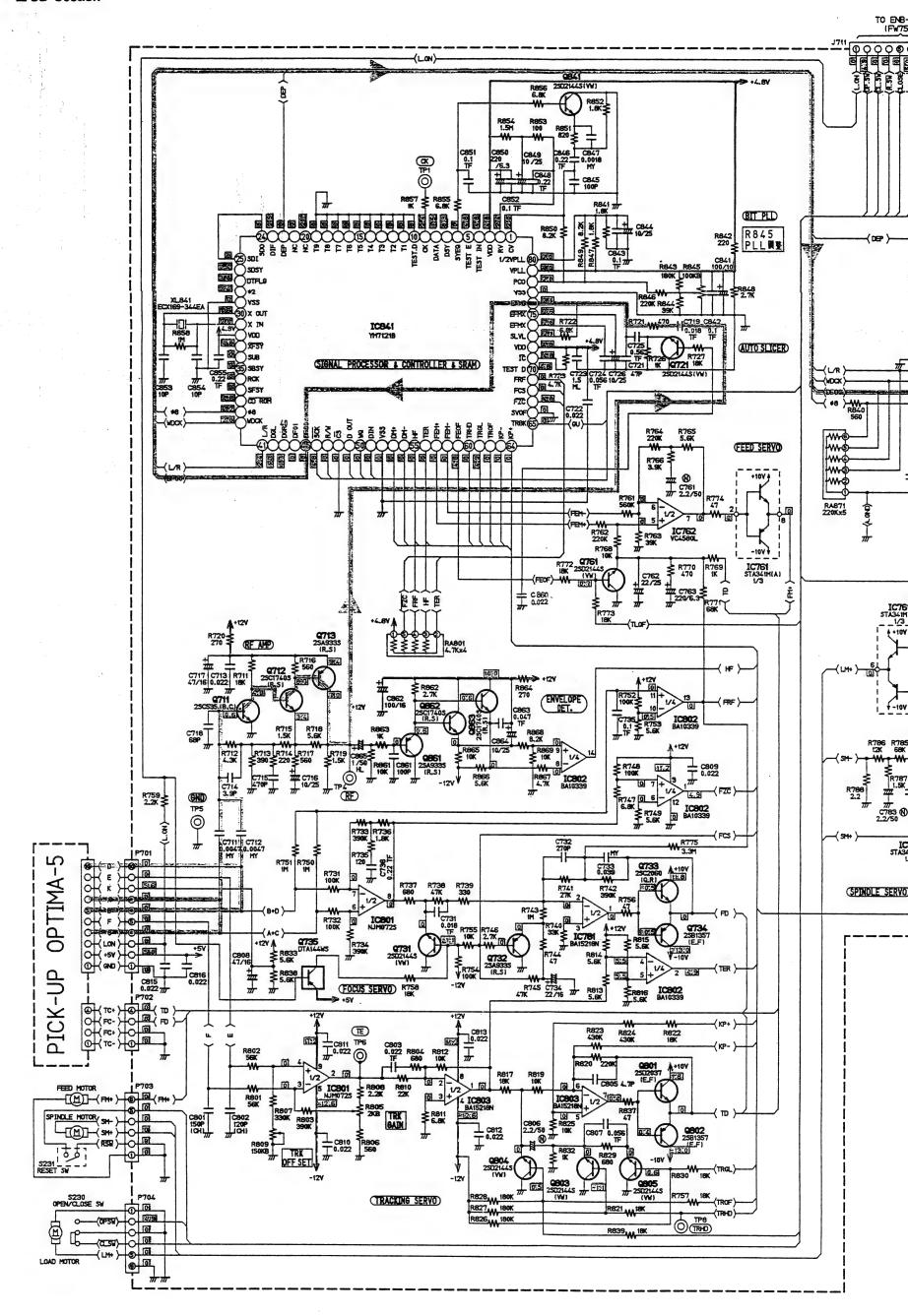
Design and specifications subject to change without notice.

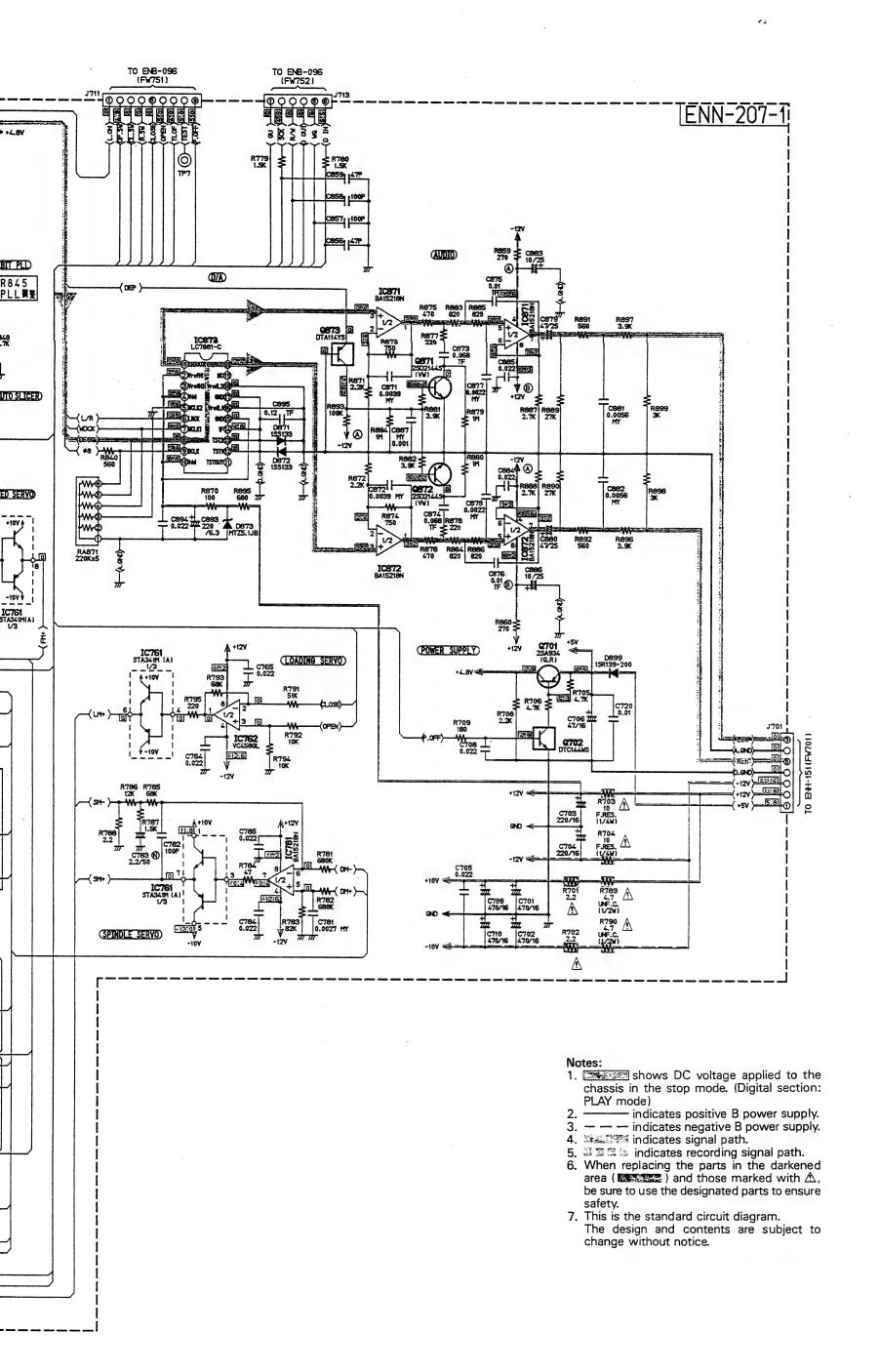
POWER SPECIFICATIONS

Area	Line Voltage & Frequency	Power Constantion
UK Australia	—— AC 240V ∼, 50Hz	330 watts
Continental Europe	AC 220V ∼, 50Hz	170 watts
Other area	AC 110 / 127/ 220 / 240V ∼, selectable, 50/60 Hz	170 Walks

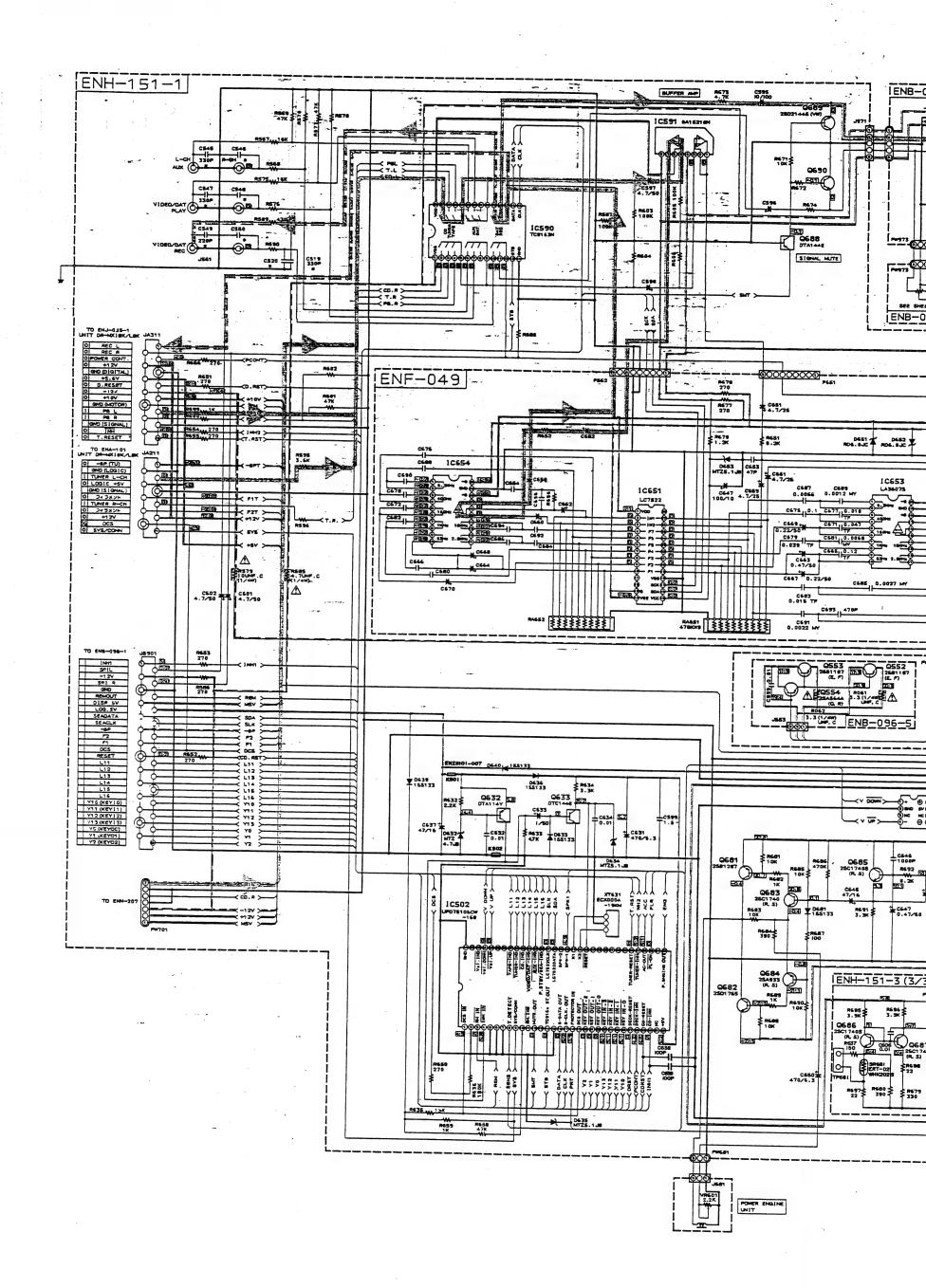


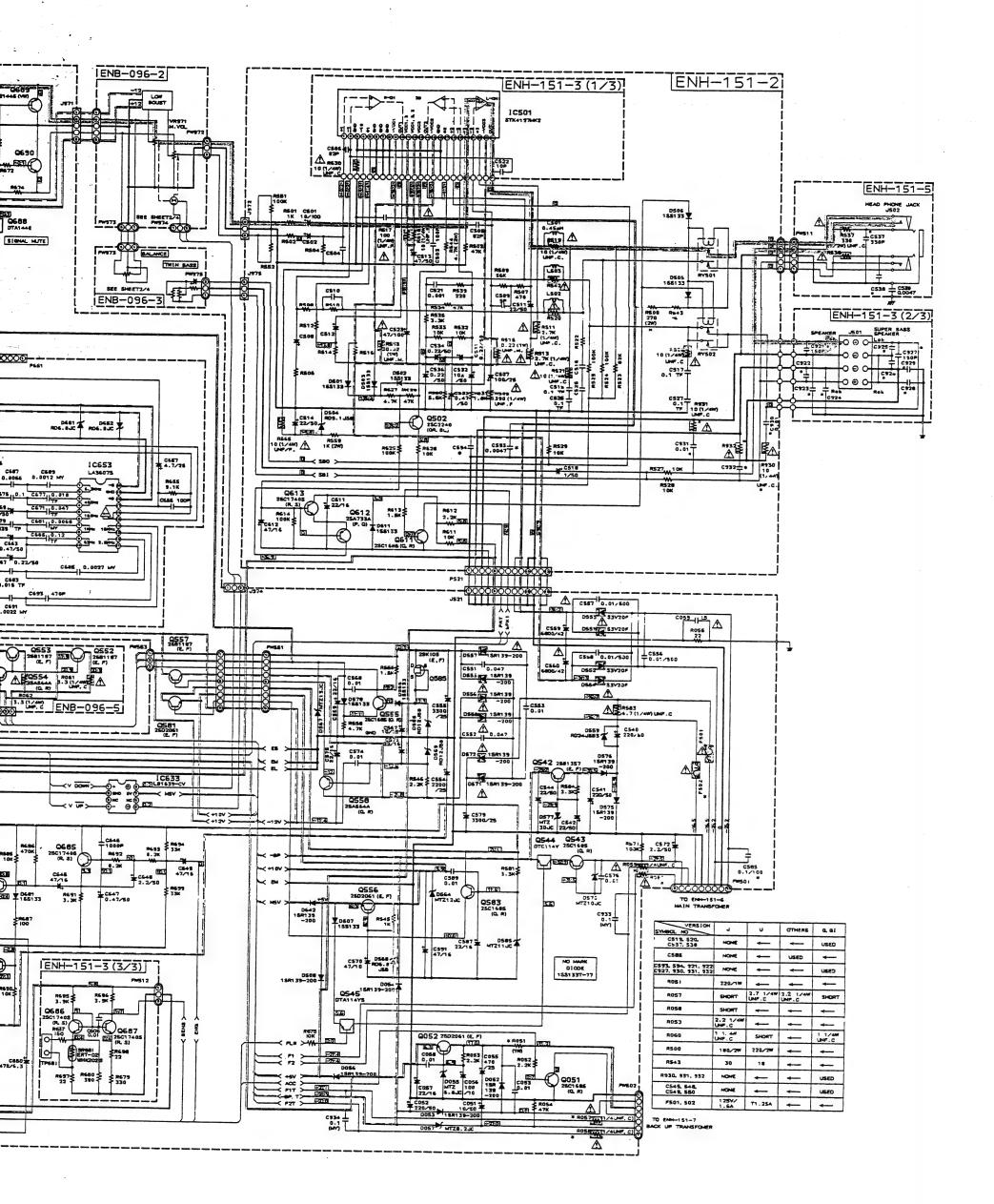
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN



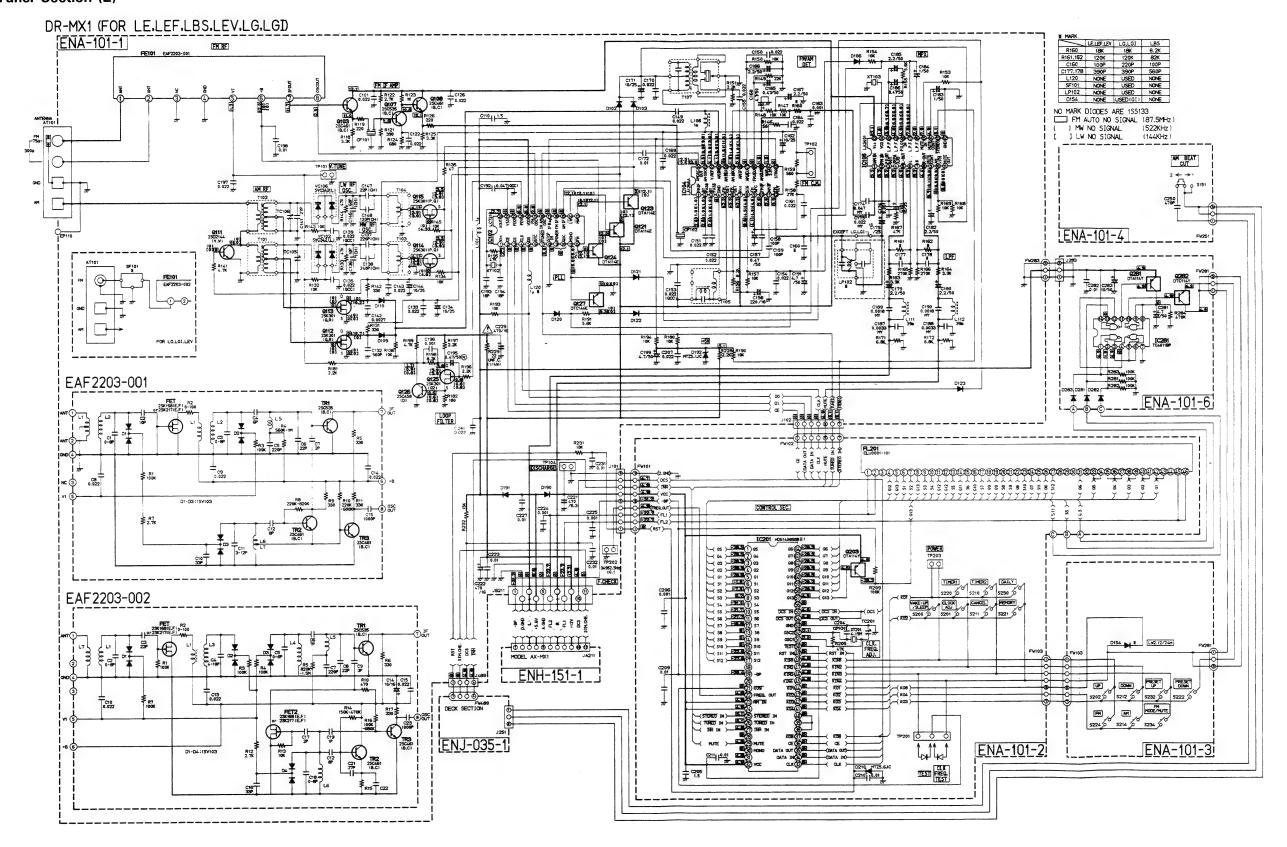


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■ Tuner Section (2)



Notes

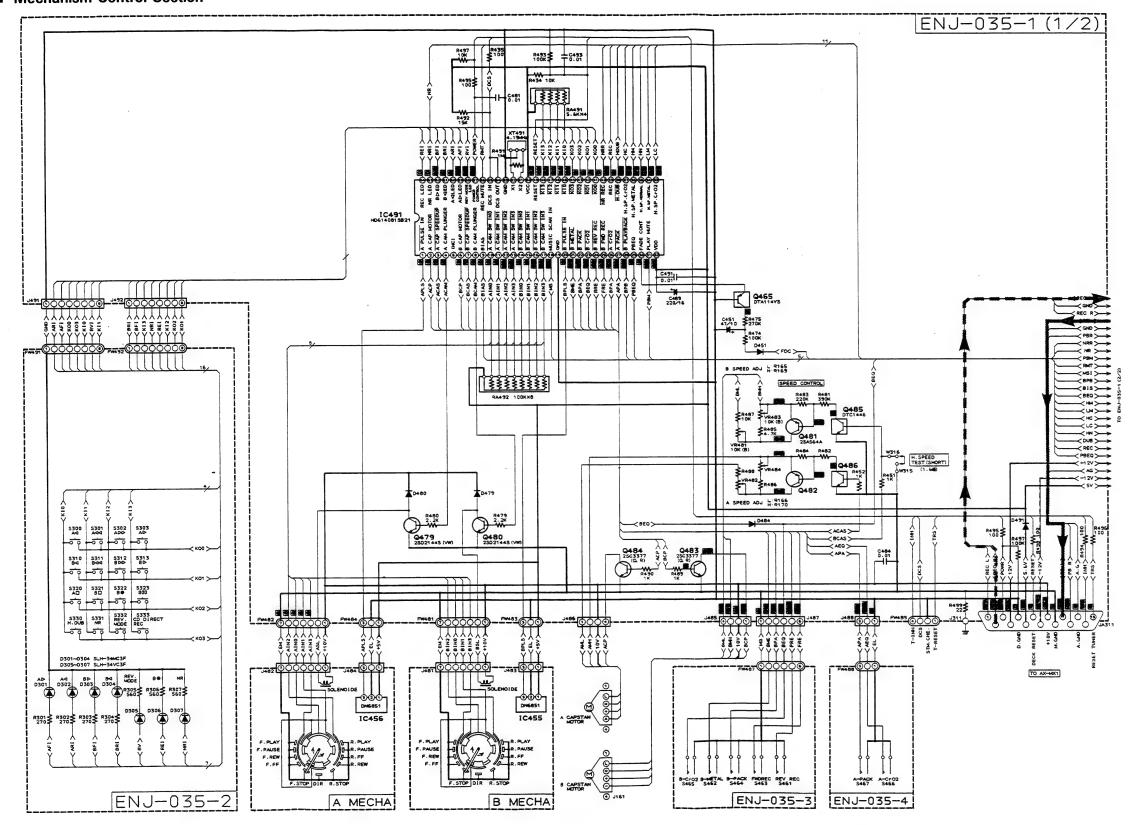
- 1. Shows DC voltage to the chassis with no signal input.
- 2. indicates +B power supply.
- 3. ----- indicates -B power supply.
- 4. indicates signal path.

- 5. When replacing the parts in the darkened are (\longrightarrow) and those marked with \triangle , be sure to use the designated parts to ensure safety.
- 6. This is the standard circuit diagram.

 The design and contents are subject to change without notice.

DR-MX1BK DR-MX1BK DR-MX1LBK

■ Mechanism Control Section

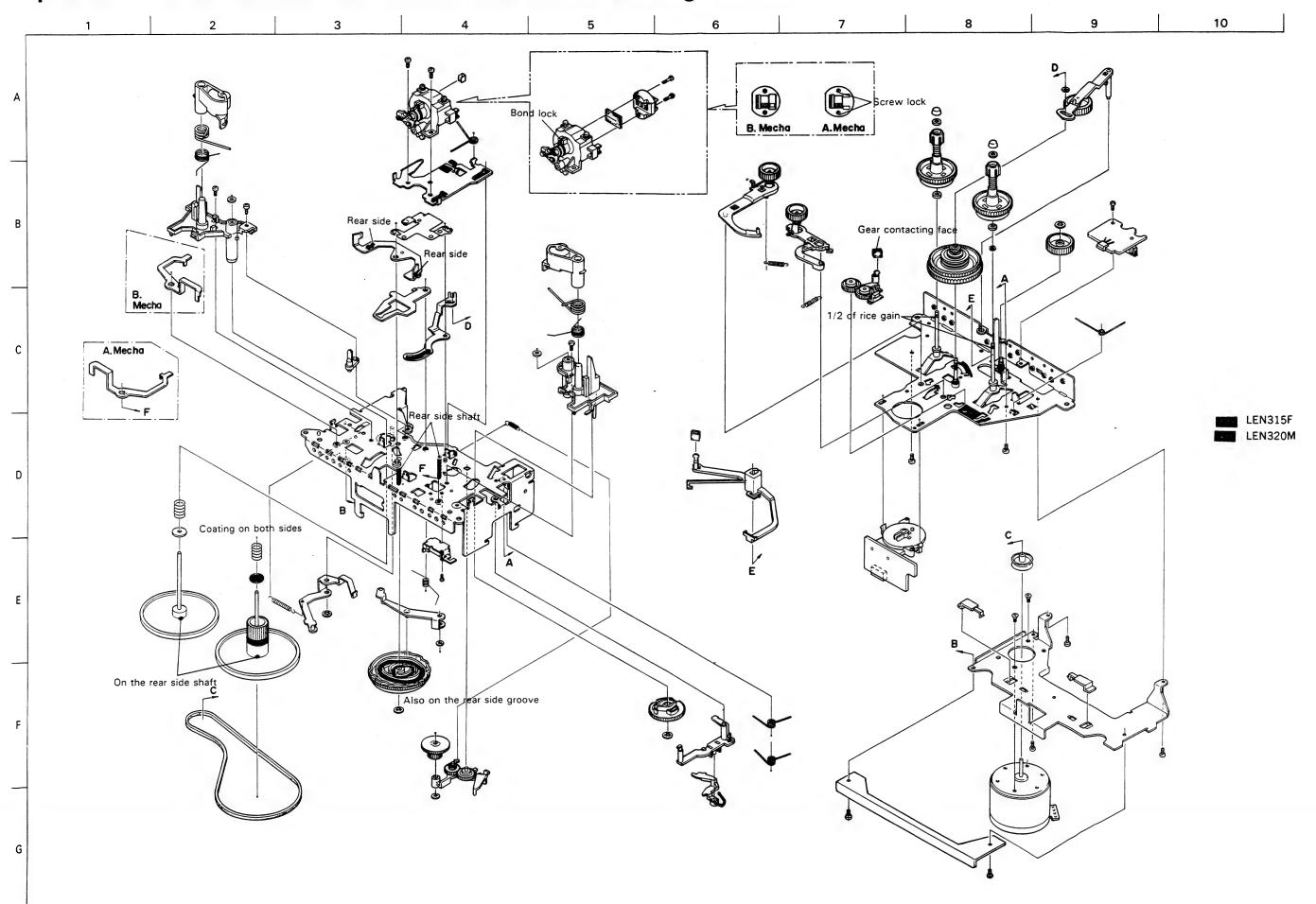


Notes:

- 1. Shows DC voltage to the chassis with no signal input.
- 2. indicates +B power supply.
- 3. ----- indicates -B power supply.
- 4. indicates signal path.

- 5. When replacing the parts in the darkened are (\blacksquare) and those marked with \triangle , be sure to use the designated parts to ensure safety.
- This is the standard circuit diagram.The design and contents are subject to change without notice.

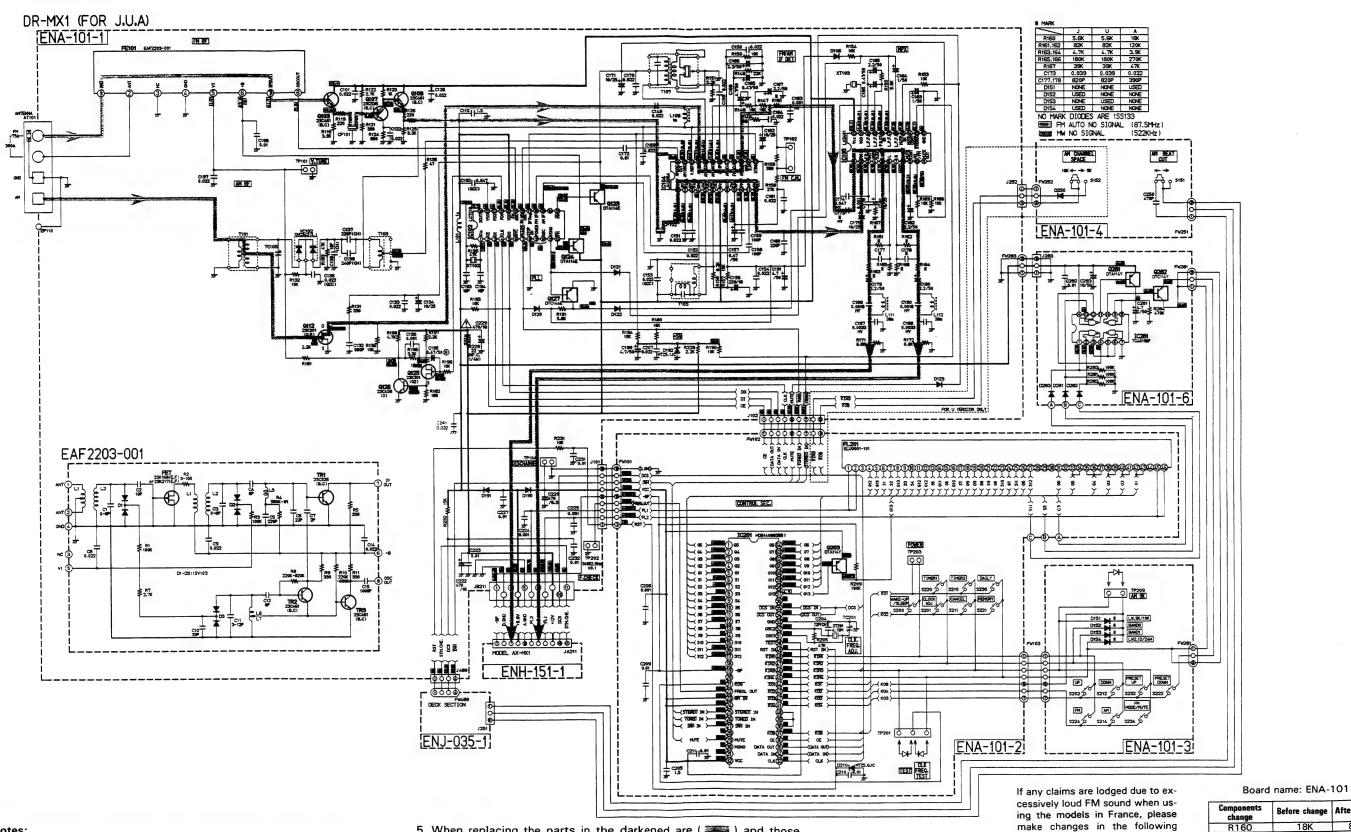
Exploded View of Cassette Mechanism and Grease Coating Position



DR-MX1BK DR-MX1BK DR-MX1LBK DR-MX1LBK

Schematic Diagrams

■ Tuner Section (1)



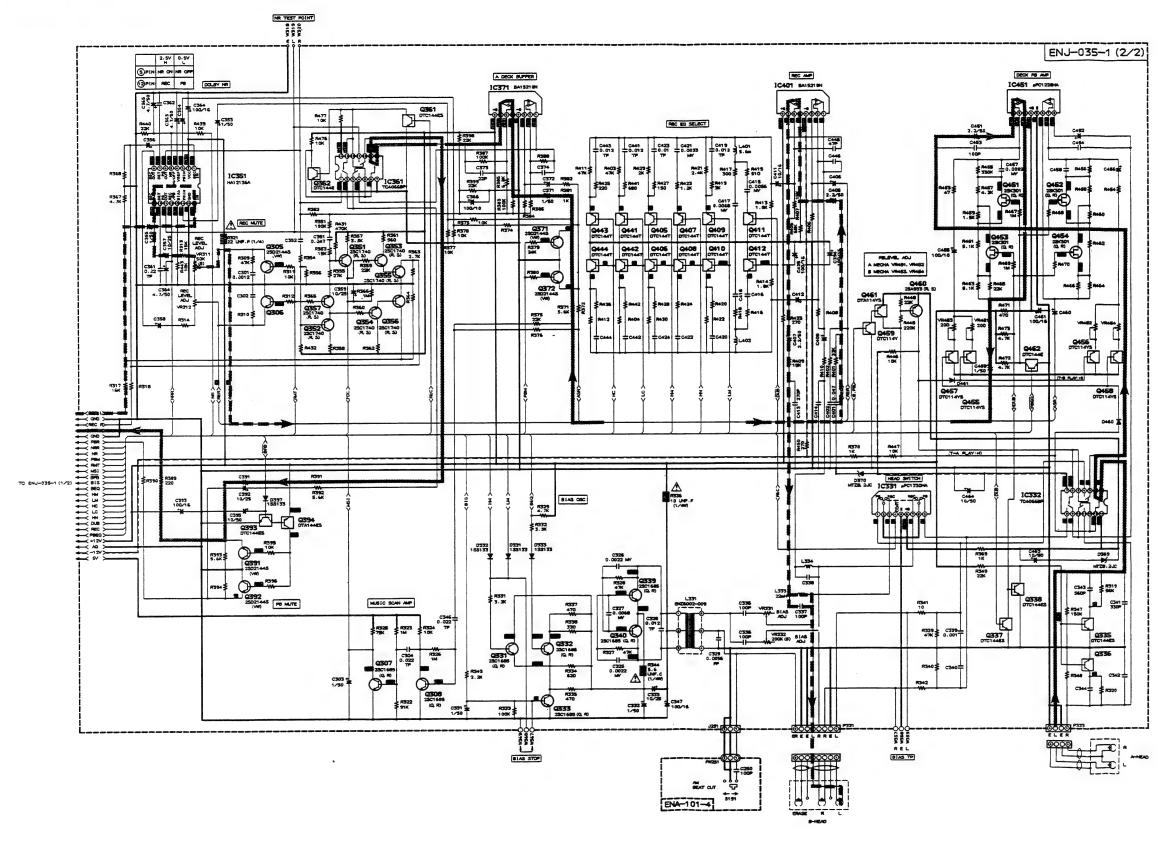
Notes:

- 1. Shows DC voltage to the chassis with no signal input.
- 2. indicates +B power supply.
- 3. ---- indicates -B power supply.
- 4. indicates signal path.

- 5. When replacing the parts in the darkened are () and those marked with \triangle , be sure to use the designated parts to ensure safety.
- 6. This is the standard circuit diagram. The design and contents are subject to change without notice.

constants:

■ Cassette Amp. Section



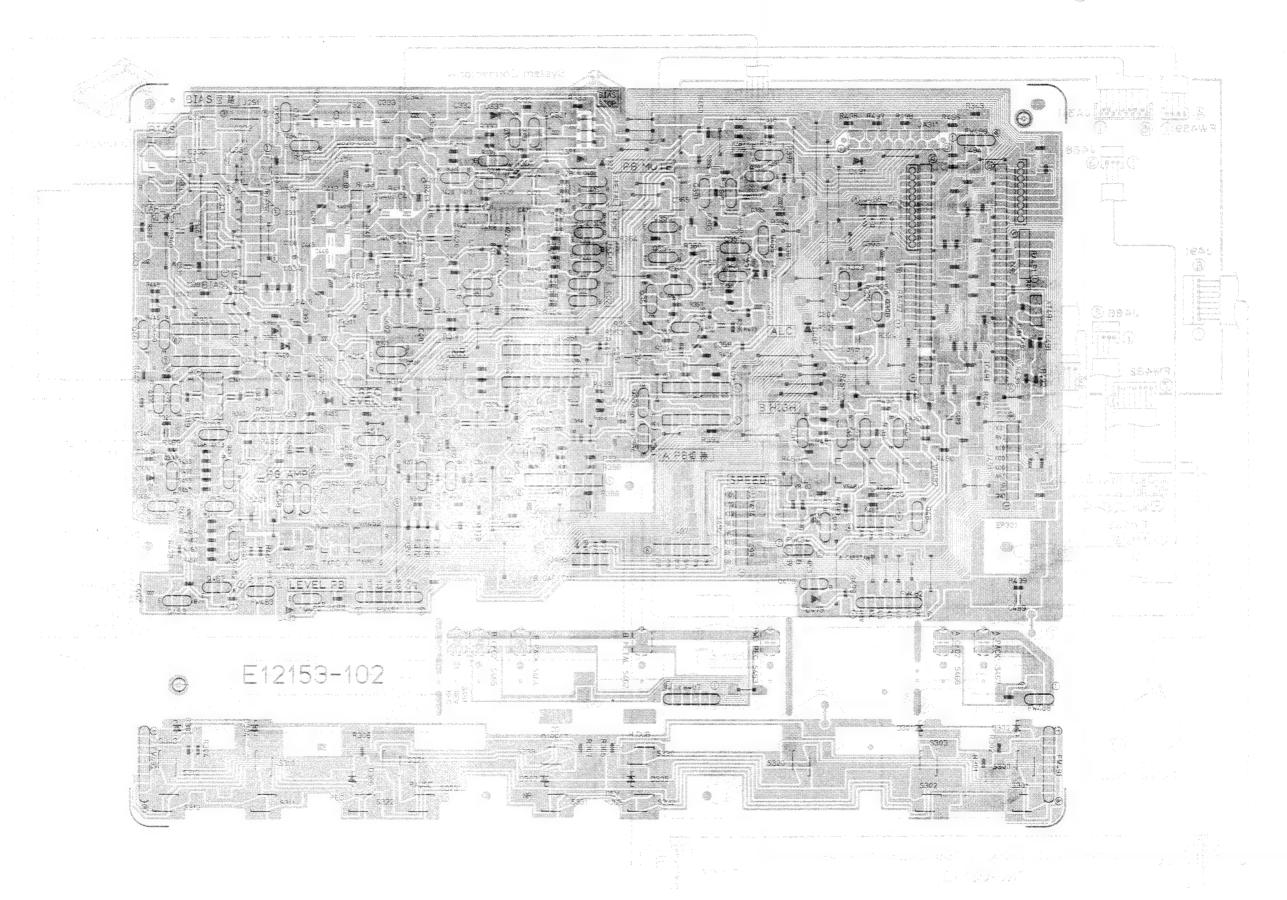
Notes:

- 1. Shows DC voltage to the chassis with no signal input.
- 2. indicates +B power supply.
- 3. ---- indicates -B power supply.
- 4. indicates signal path.

- 5. When replacing the parts in the darkened are (\blacksquare) and those marked with \triangle , be sure to use the designated parts to ensure safety.
- 6. This is the standard circuit diagram.

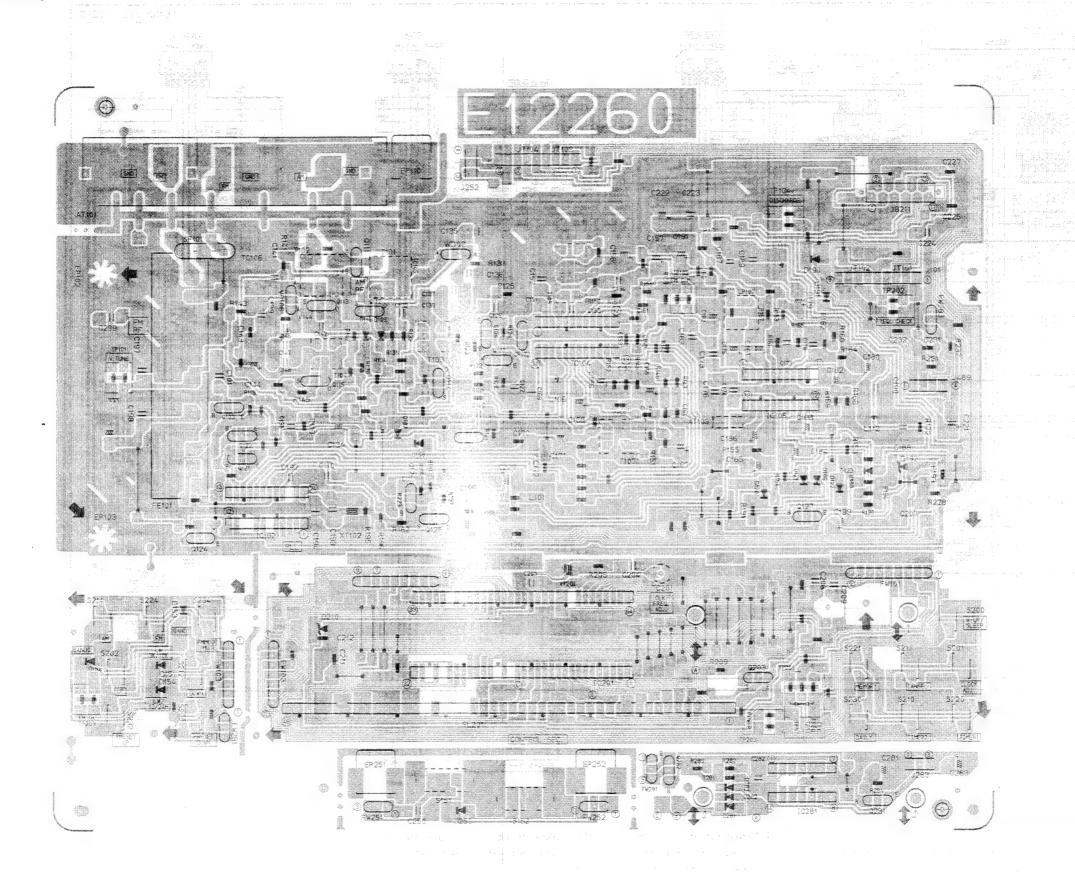
 The design and contents are subject to change without notice.

Connection Diagrams



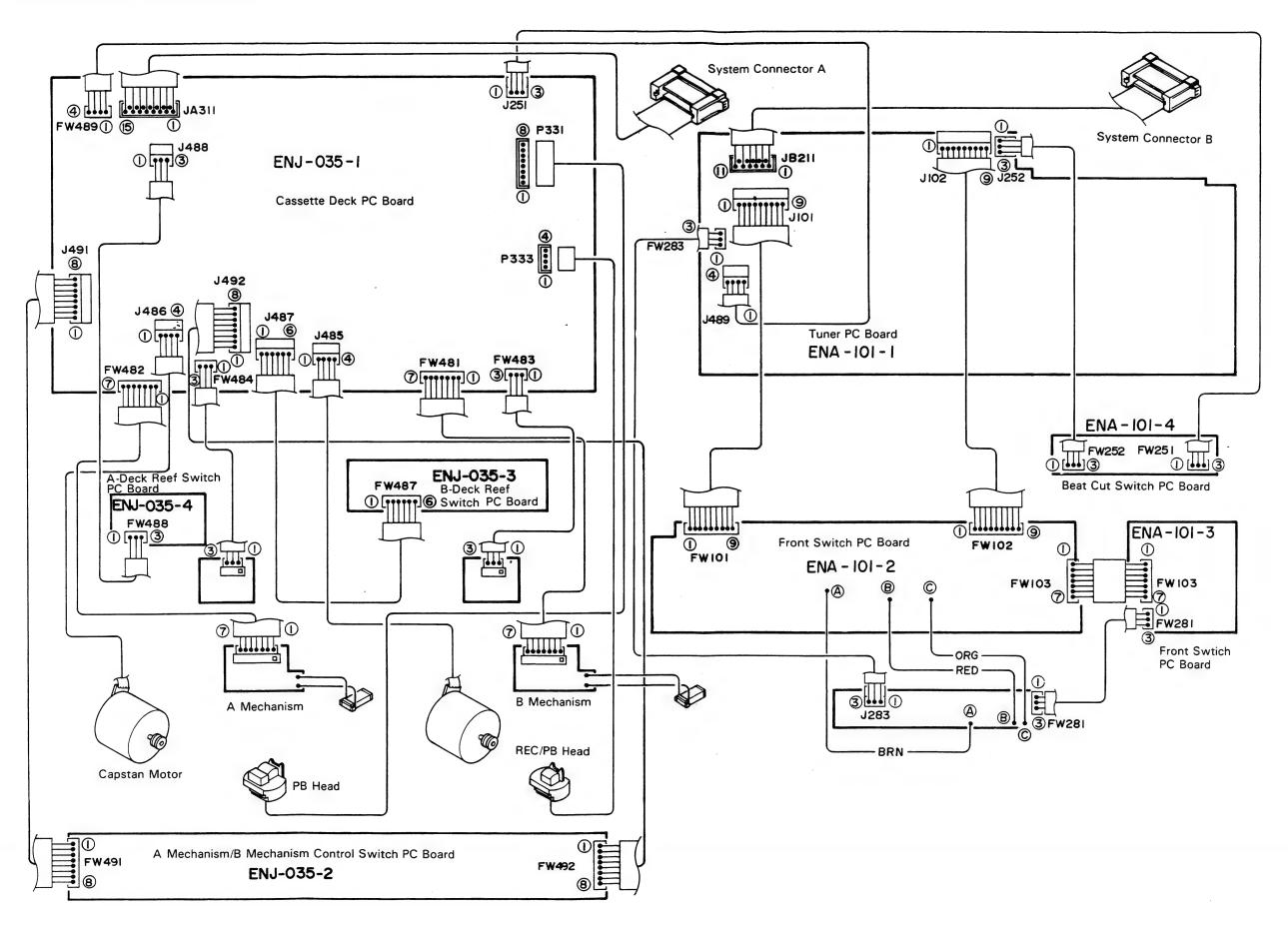
Printed Circuit Boards

■ Tuner P.C. Board (ENA-101)

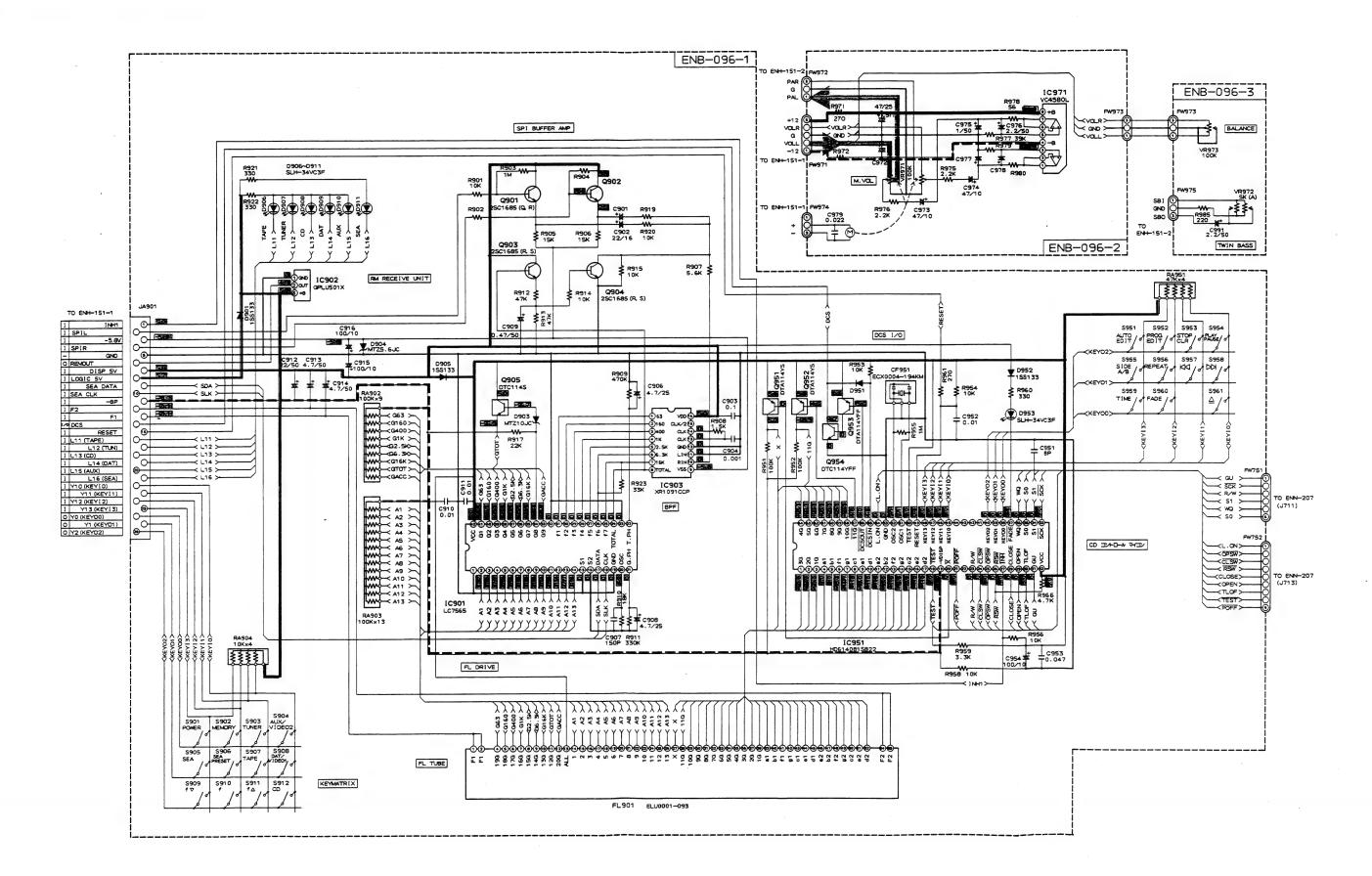


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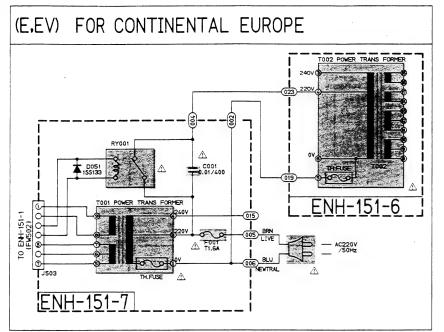
Connection Diagrams

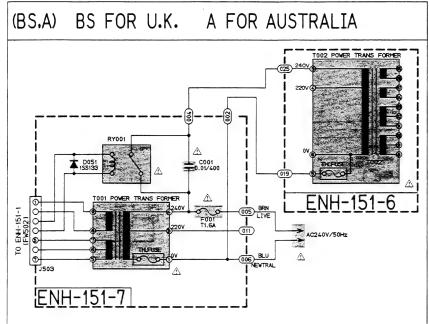


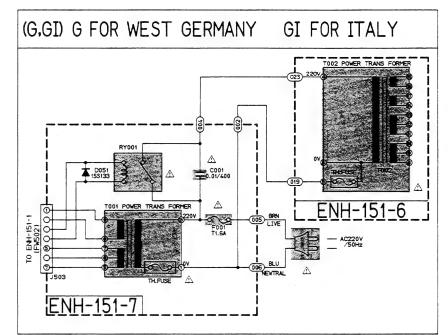
FL Display & CD Control Section

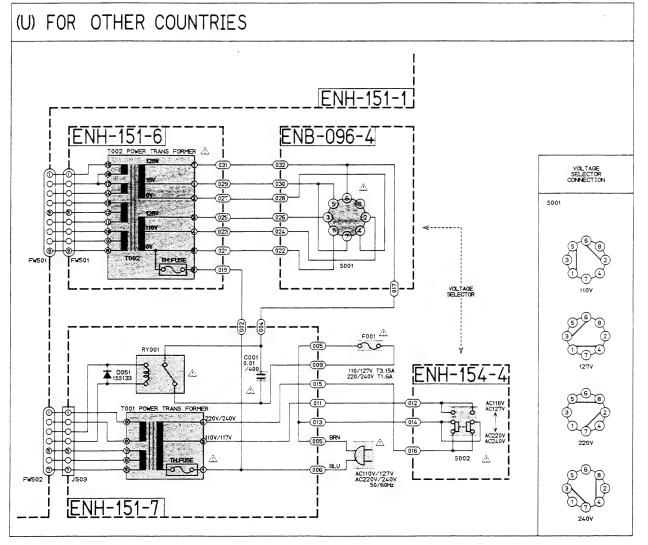


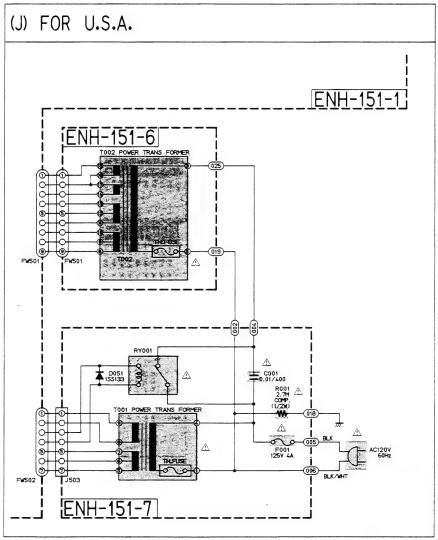
Power Primary Section





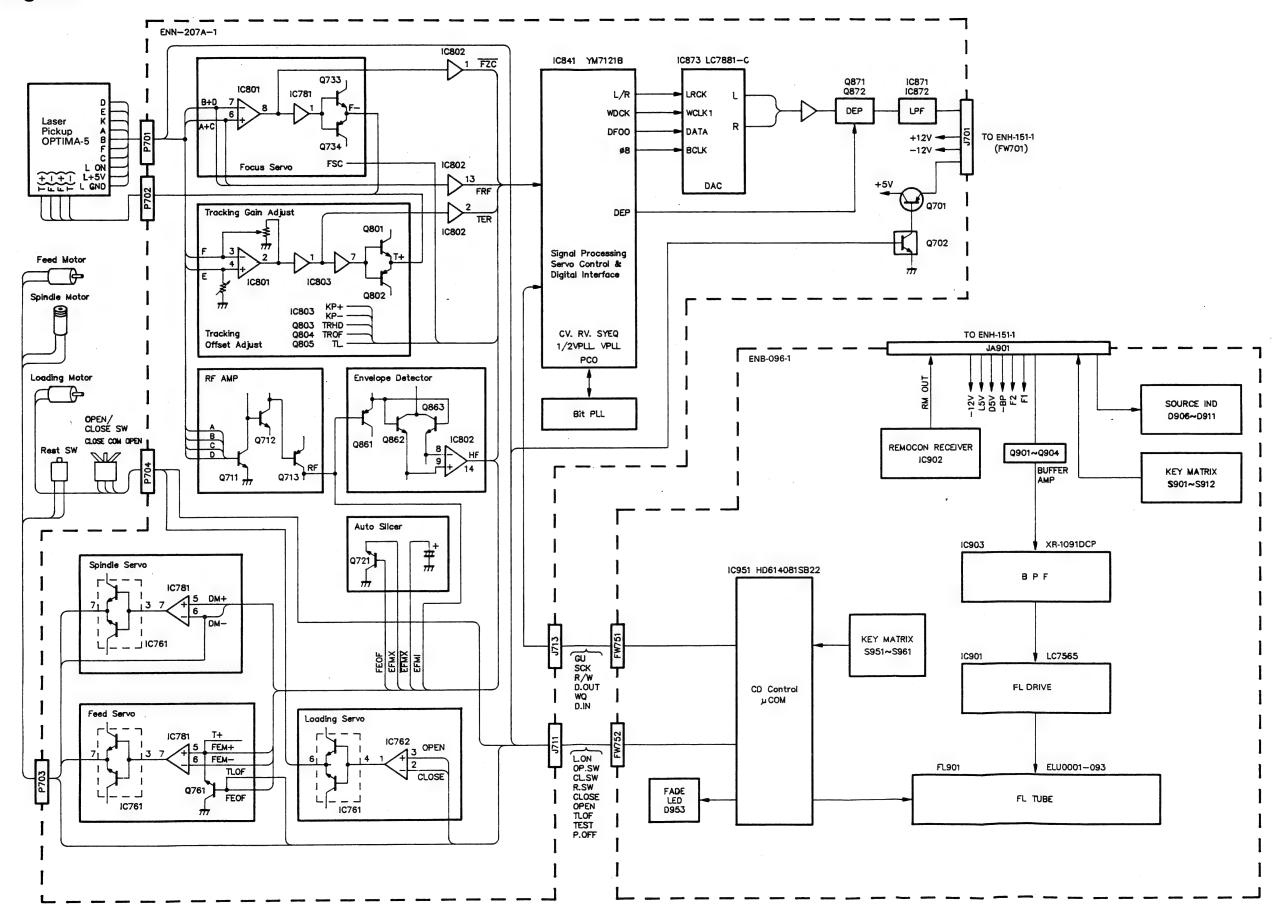


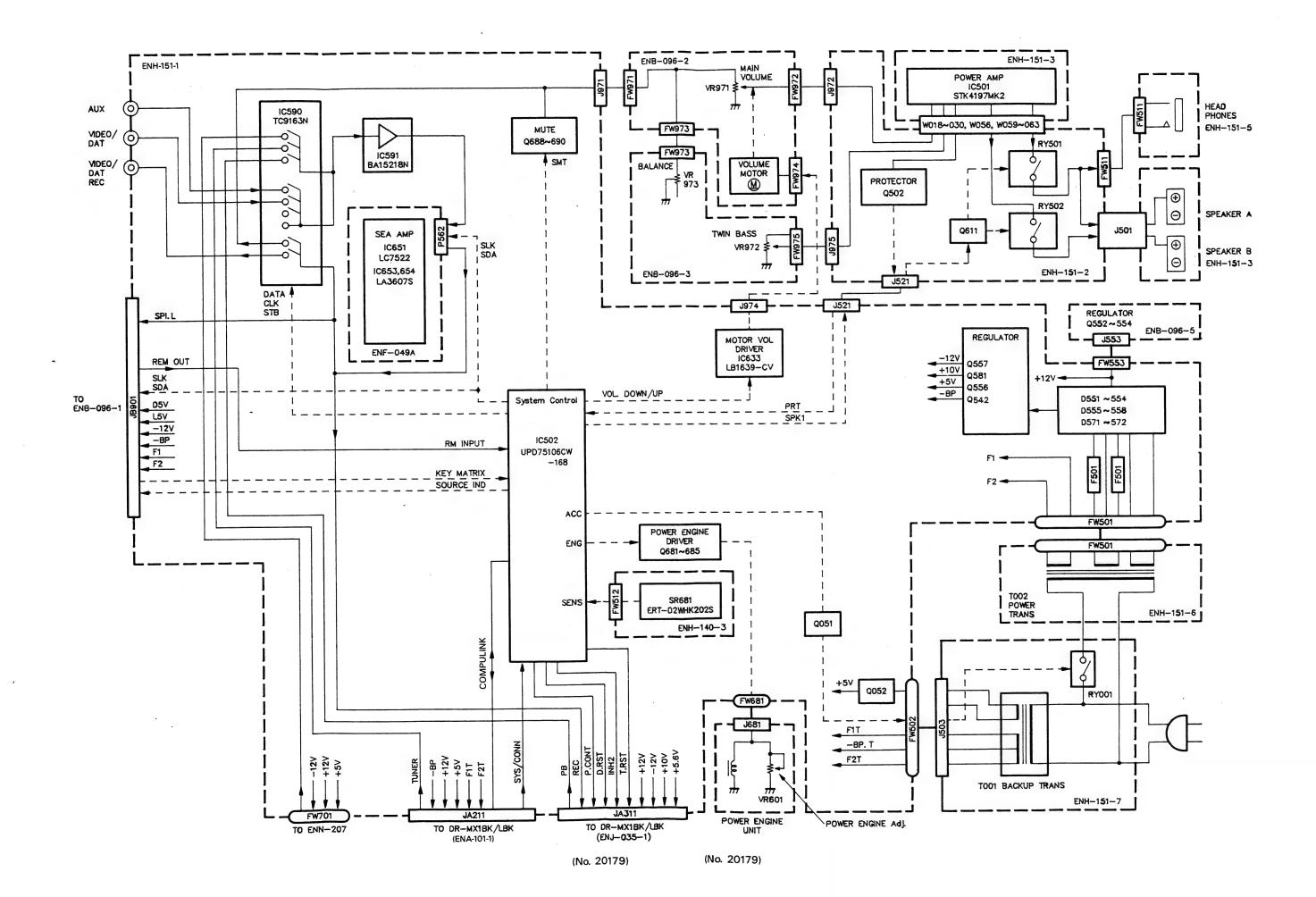




(No. 20179)

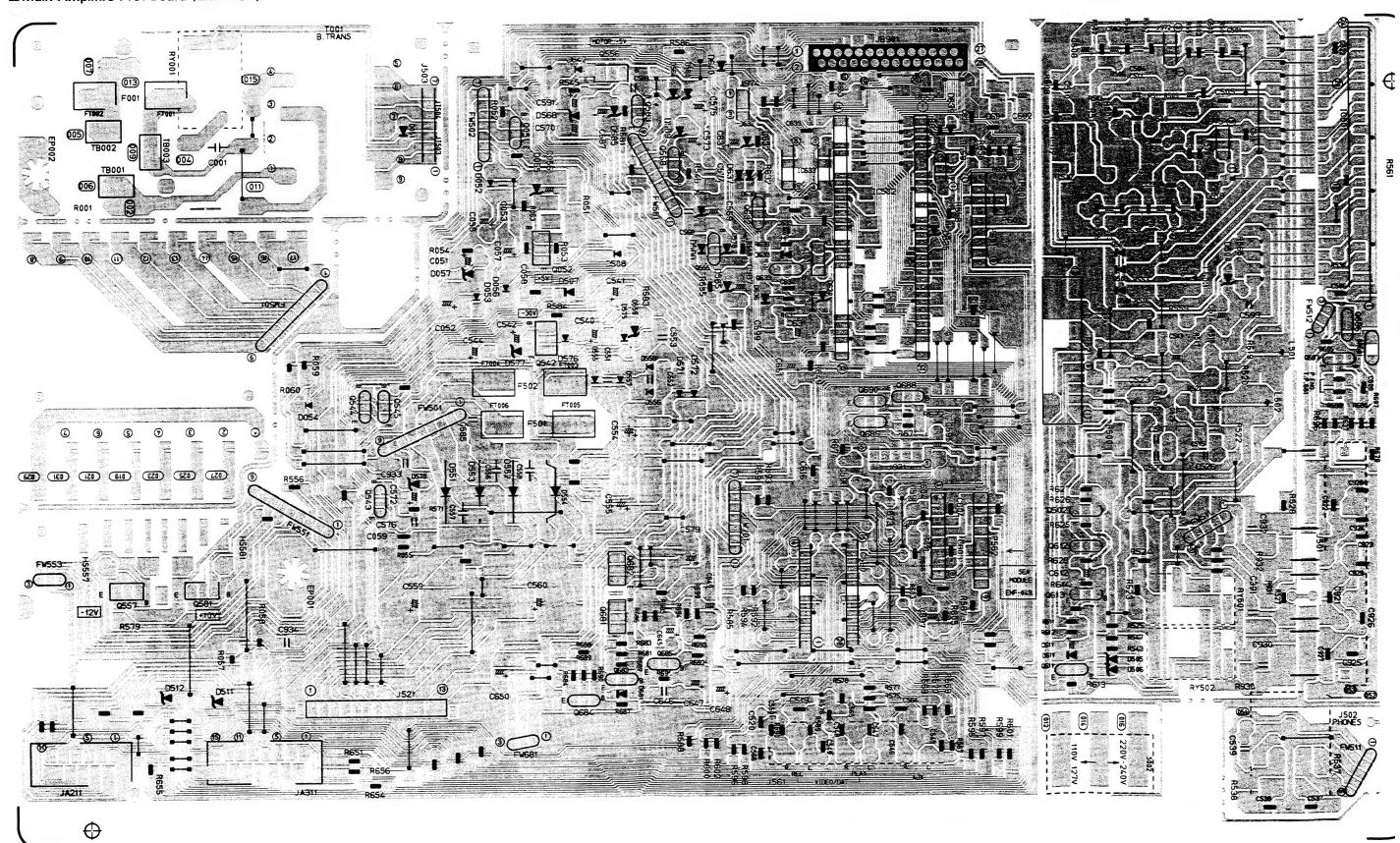
Block Diagram



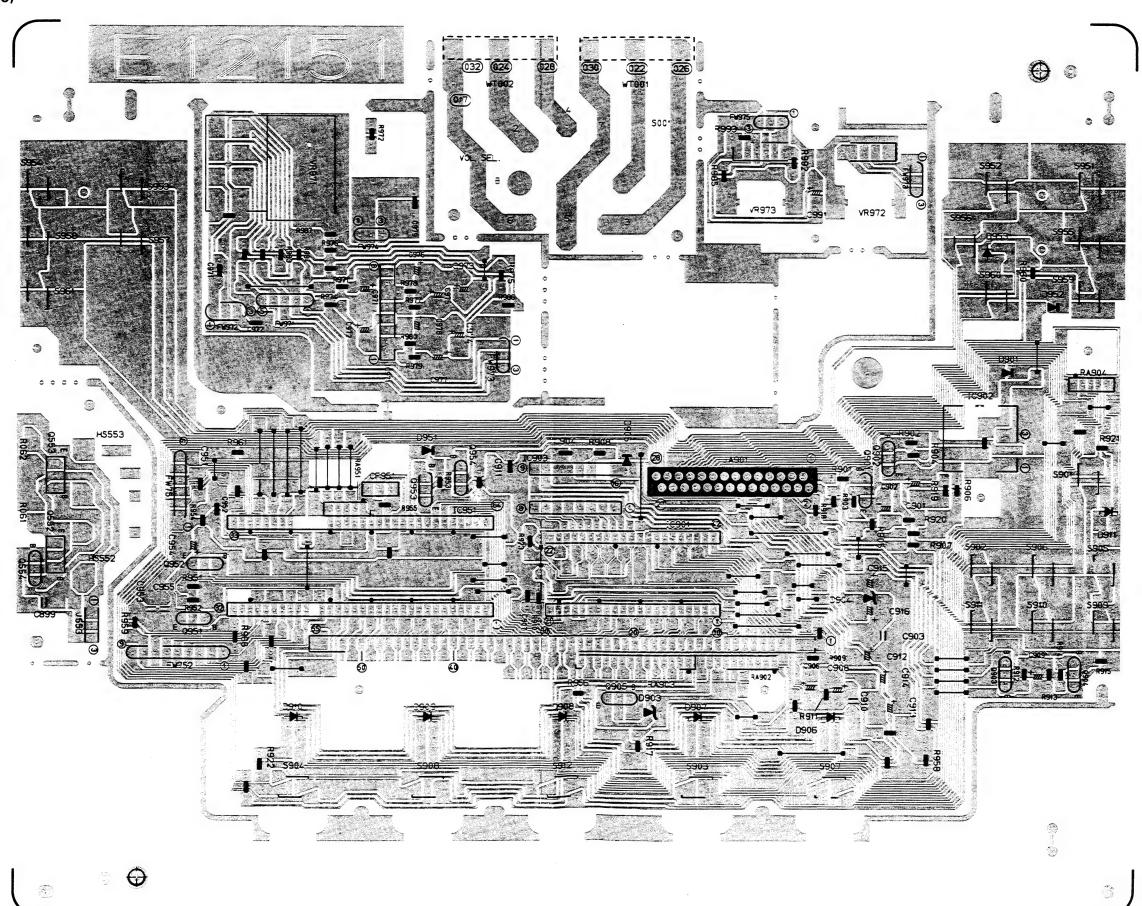


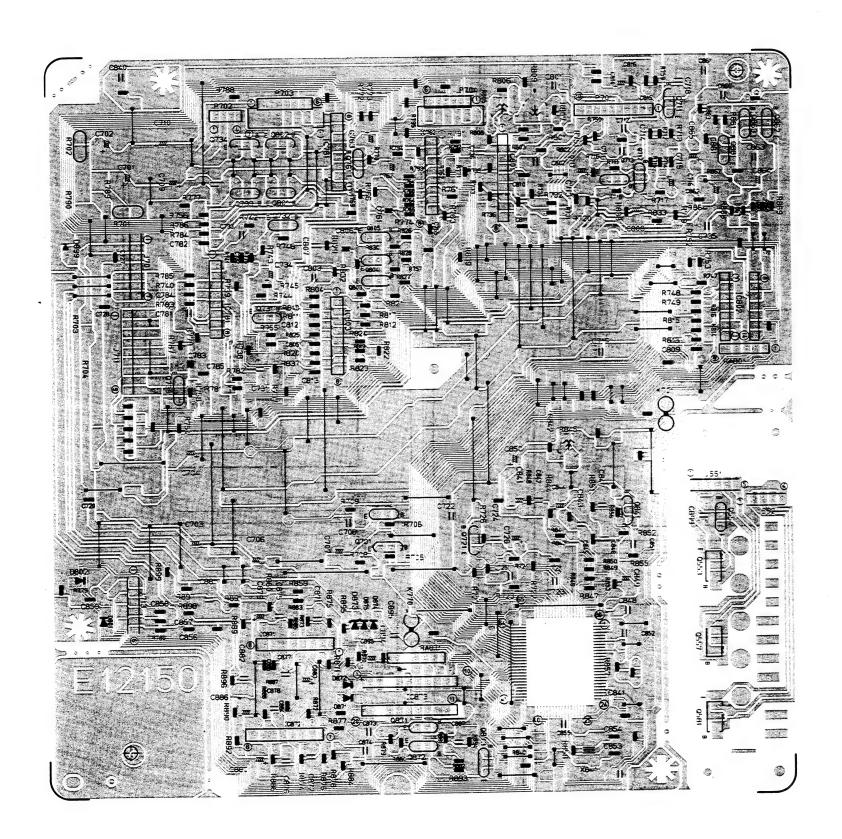
Printed Circuit Board Ass'y

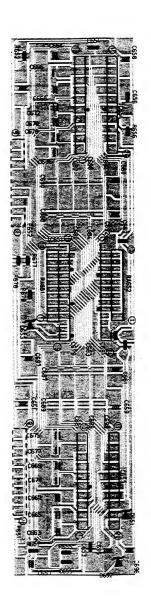
■ Main Amplifire P.C. Board (ENH-151)



Front P.C. Board (ENB-096)

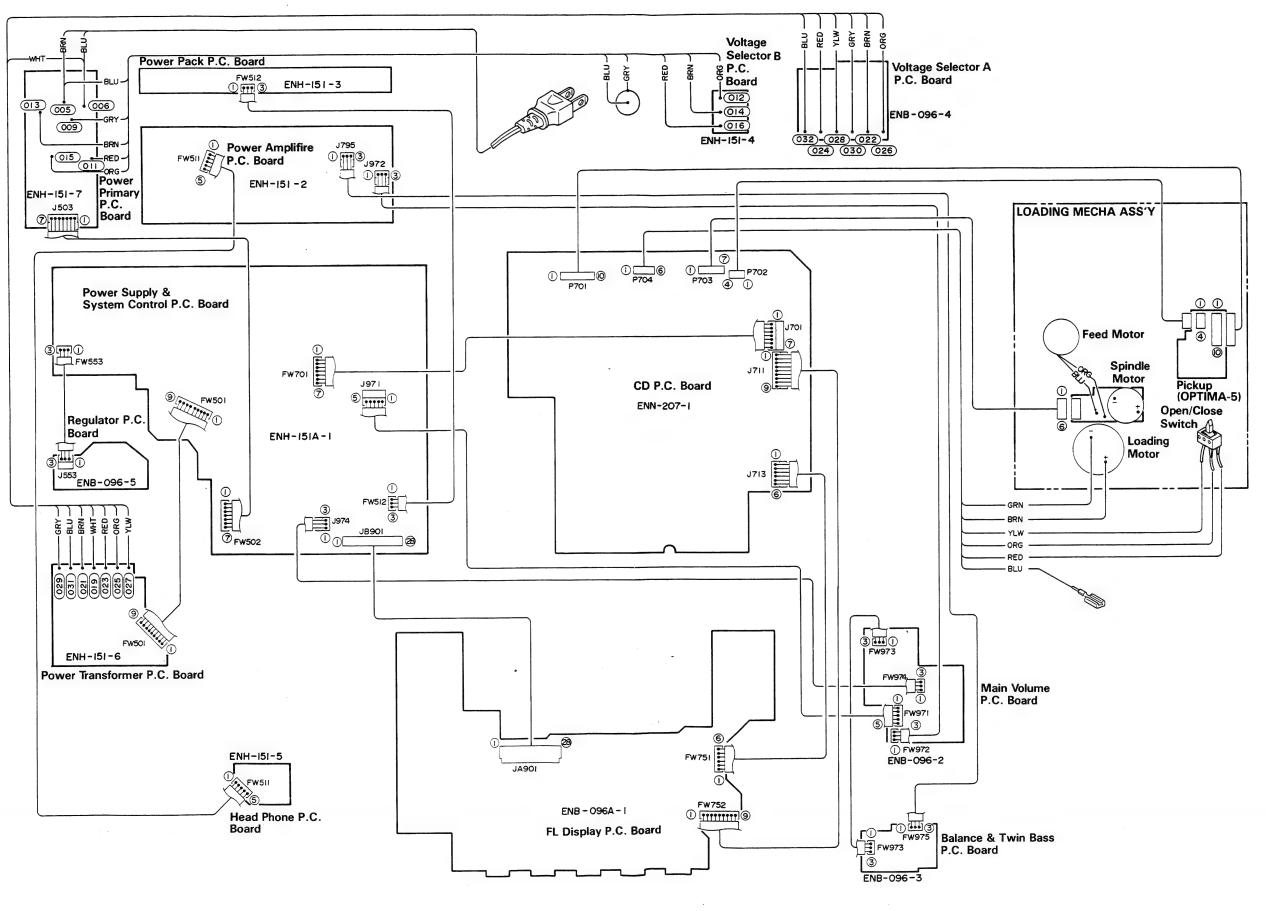






AX-MX1BK AX-MX1BK AX-MX1LBK

Connection Diagram

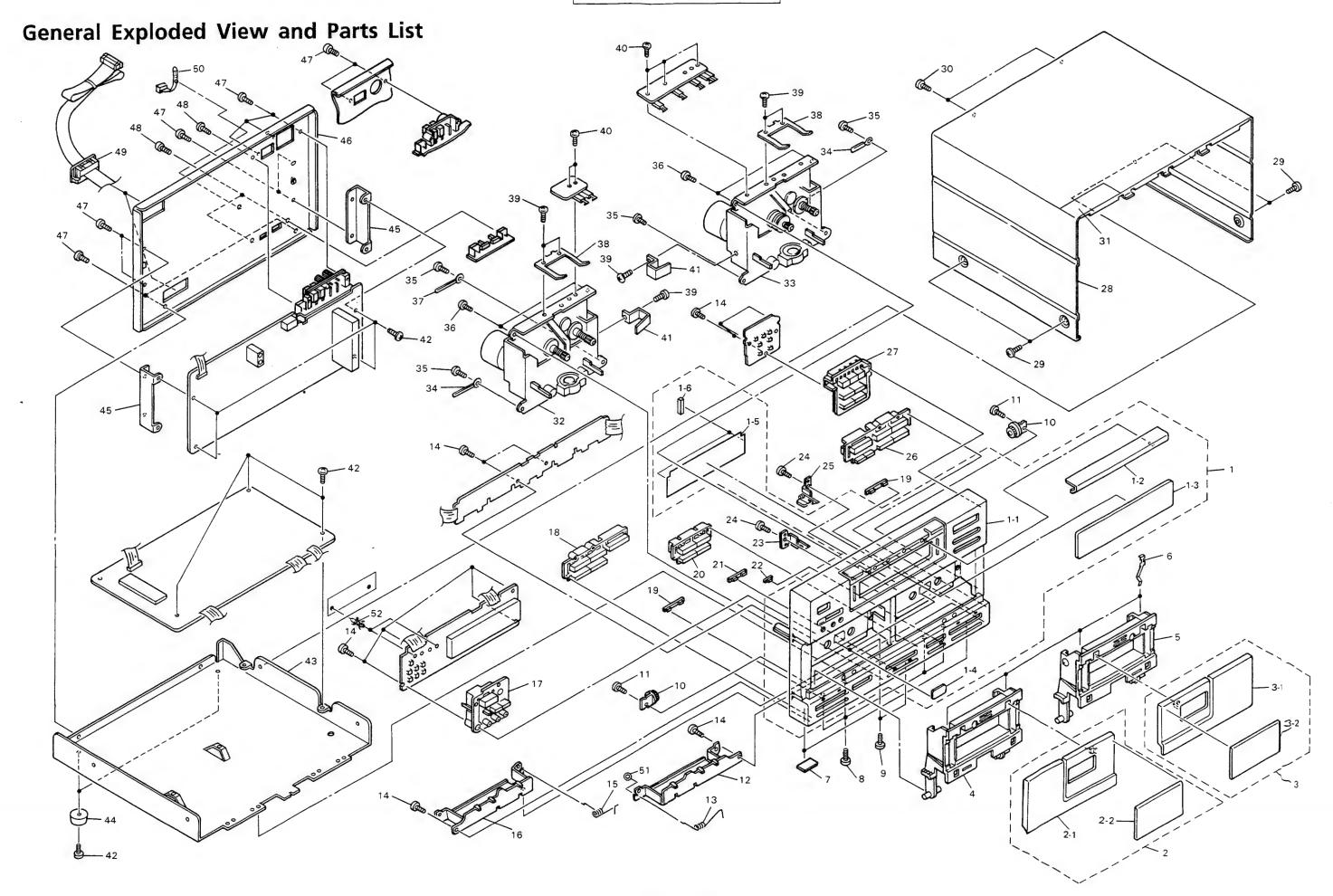


PARTS LIST

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Printed Circuit Board Ass'y and Parts List	2-11
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■ ENA-101 Tuner PC Board Ass'y	2-15

DR-MX1BK DR-MX1LBK DR-MX1BK DR-MX1LBK



DR-MX 1BK DR-MX 1LBK

■Parts List

A	Item	Part Number	Part Name	Q'ty	Description	Areas
	1 1-1 1-2 1-3 1-4	EFP-DRMX1BKE(S) E12160-006 E306526-002 E306528-002 E69777-003	Front Panel Ass'y Front Panel Tuner Ornament Tuner Window Reaf Plate	1 1 1 1 2		
	1-5 1-6 2 2-1 2-2	E75960-001 EXO020003N30S E306541-002SA E306541-002 E306545-003	FL Screen Felt Spacer Cassette Lid Ass'y Cassette Lid Cassette Window	1 2 1 1 1	A A A	
	3 3-1 3-2 4 5	E306543-002SA E306543-002 E306547-003 E26582-003 E26583-003	Cassette Lid Ass'y Cassette Lid Cassette Window Cassette Holder Cassette Holder	1 1 1 1	B B B A B	
	6 7 8 9	VYK4180-001 E75896-001 SDST3006M SDST3006Z E305654-003	Holder Spring Felt Spacer Screw Screw Damper	4 2 4 2 2		
	11 12 13 14 15	SBSF3010Z E306581-002 E74932-002 SDSF2608Z E74931-002	Screw Holder Bracket Holder Spring Screw Holder Spring	2 1 1 11 11	Right Right Left	
	16 17 18 19 20	E306540-002 E306532-001 E306534-001 E75734-001 E306538-002	Holder Bracket Push Button Push Button Indicator Push Button	1 1 1 2 1	Left Timer Play A Play A , B Dolby	
	21 22 23 24 25	E75735-001 E75736-001 E75396-001 SBSF3006M E75397-002	Indicator Indicator Lock Cam Screw Lock Cam	1 1 1 2	Dolby Rec	
	26 27 28 29	E306536-001 E306530-002 E306530-003 E26586-006 SDSG3006M	Push Button Push Button Push Button Metal Cover Screw	1 1 1 1 4	Play B Band Band	J,U,A Except J, U, A
	30 31 32 33 34	SDSG3010M E67000-014 E72018-001	Screw Caution Label Cassette Mechanism Ass'y (A) Cassette Mechanism Ass'y (B) Wire Clamp	2 1 1 1 2	See page 2-7 See page 2-7	
	35 36 37 38 39	SBST3006C SBSF3008C PU49485-3 VYK4279-003 SDST2604Z	Screw Screw Wire Clamp Pack Spring Screw	4 4 1 2 6		
	40 41 42 43 44	VKZ4601-001 E75216-004 SBSG3008N E12162-001 E47227-029	Screw Spring Screw Chassis Base Foot	5 2 9 1 2		
	45 46	E305919-003 E26711-001 E26711-002 E26711-003 E26711-004	Circuit Board Bracket Rear Panel Rear Panel Rear Panel Rear Panel	2 1 1 1 1		J U A LE,LEF

⚠: Safety Parts

2-5 (No. 20180) 2-6 (No. 20180)

Δ	Item	Part Number	Part Name	Q'ty	Description	Areas
	47 48	E26711-005 E26711-006 E73273-006 E73273-006 SBST3008M	Rear Panel Rear Panel Special Screw Special Screw Screw	1 1 9 8 3		LG,LGI,LEV LBS Except LG, LGI, LEV LG, LGI, LEV
	49 50 51 52	E305920-001 E304880-001 E73967-007 E406070-001 E61029-005	Cord Holder Cord Holder Spacer Fastener Number Label	2 1 1 2 1		

♠: Safety Parts

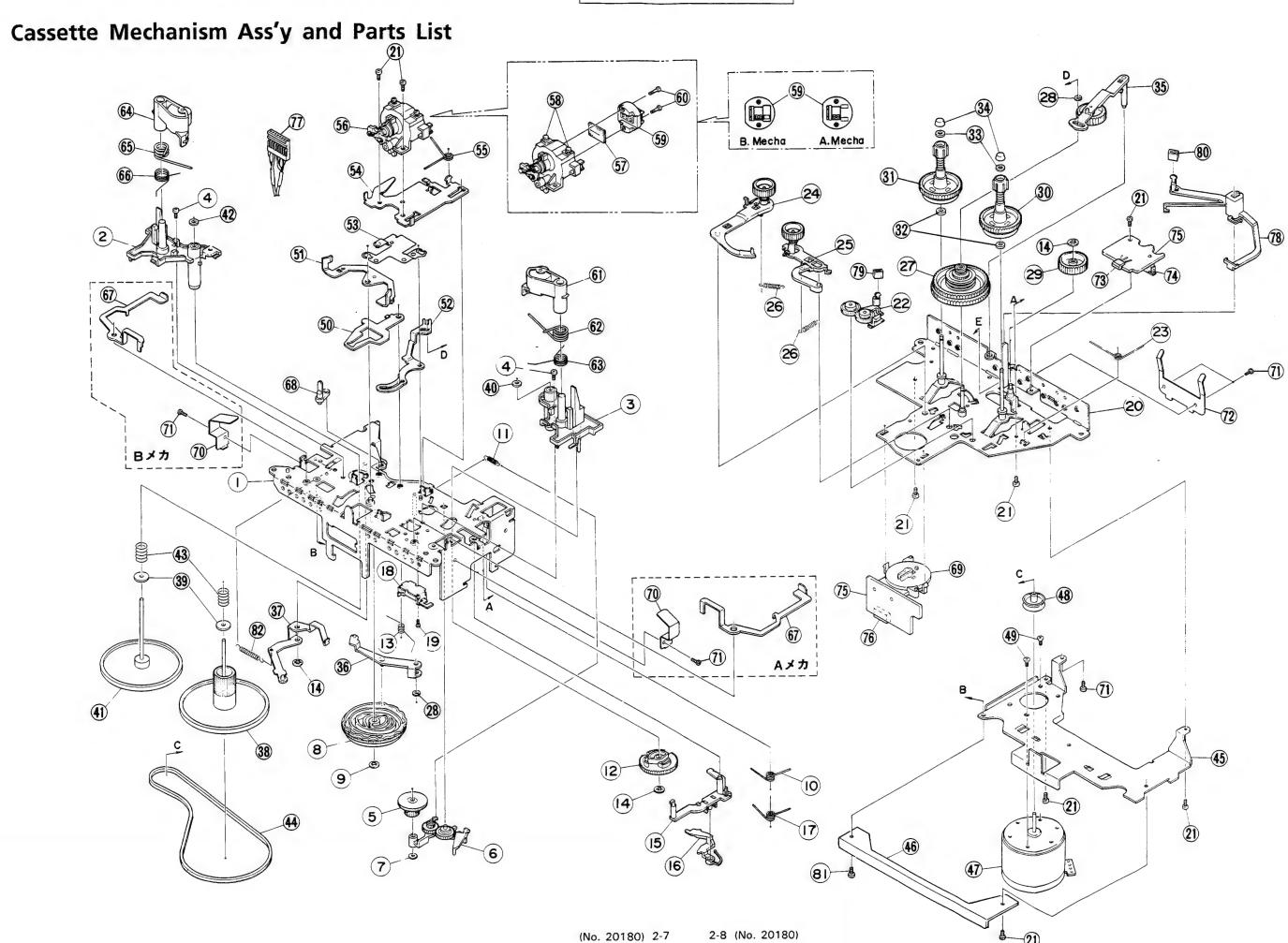
The Marks Designated Areas

AAustralia	LE, L
Jthe U.S.A.	LEV-
UOther Countries	LGI
LGWest Germany (with LW)	No n
LBSthe U.K. (with LW)	

LE , LEFContinental Euorpe
LEVSwitzerland (with LW)
LGIIraty (with LW)

No mark indicates all areas.

DR-MX1BK DR-MX1BK DR-MX1LBK



Parts List

Parts				T	
Item	Part Number	Part Name	Q'ty	Description	Areas
1	VKL2470-00E	Chassise Base Ass'y	1	Left	
2	VKS2192-00B VKS2193-00E	Houging Houging	1	Right	
4	SDST2605Z	Screw	2	Right	
5	VKR3168-002	Geneva Gear	1		
6	VKS5249-00F	Select Arm Ass'y	1		
7	WDL214025-4	Washer	1		
8	VKS2194-002	Drive Cam Gear	1	1	
9	VKZ4036-002	Frat Push Nut	1		
10	VKW3006-195	Spring	1		
11	VKW3002-258	Spring	1		
12	VKS2195-002	Select Cam Gear	1	1	
13	VKW4825-004	Spring	1 3		
14 15	VKZ4036-001 VKS3414-001	Frat Push Nut Trigger Lever	1		
16	VKS5214-001	Neutral Ass'y	1		
17	VKW3006-203	Spring	1		
18	VGP1601-002	Solenoide	i		
19	VKZ4539-003	Screw	1		
20	VKL2471-00C	Rell Base Ass'y	1		
21	SDST2004Z	Screw	. 9		
22	VKS5262-00G	Pick up Arm Ass'y	1		
23	VKW3006-197	Spring	1 1		
24 25	VKS5217-00C VKS5218-00C	FF Arm Ass'y Rew Lever Ass'y	1 1]	
26	VKW3002-260	Spring	2		
27 28	VKR3166-00H WDL163525-4	Crutch Ass'y Washer	1 2		
- 29	VKR4582-001	P.Conect Gear	1		
30	VKR4519-00A	Rell Disc Ass'y	1		
31	VKR4518-00A	Rell Disc Ass'y	1		
32	VKZ4003-010	Felt	2		
33	VKR4170-001	Rink -	2	0	
34	VKS4131-001	Rell Stopper	2		
35	VKS5221-00D	T-UP Arm Ass'y	1		
36	VKL6647-001	P/R ACT Lever	1		
37 38	VKM3248-003 VKF3161-00E	Play Arm Flywheel Ass'y	1 1	Front	
39	VKZ4035-015	Washer	2	l i i i i i i i i i i i i i i i i i i i	
40	VKZ4035-009	Washer	1		
41	VKF3168-00A	Flywheel Ass'y	1	Rear	
42	Q03093-527	Washer	1		
43	VKW3001-271	Spring	2		
44 45	VKB3000-134 VKM3345-00A	Beit F.M.Bracket	1		
46	VKM3325-003	Support Bracket	1		
46	MMI-6H2LWK	D.C. Moter	1		
48	VKR4583-002	Moter Pulley	i		
49	SSSP2605Z	Screw	2		
50	VKL6648-00A	DIR Lever Ass'y	1		
51	VKM3249-001	P/R Lever	1		
52	VKL6650-003	TUP Lever	1 1		
53	VKY4570-003	Spring Plate Head Base	1 1	1	
54 55	VKM3250-002 VKW3006-201	Spring	1		
56	VK\$3349-00E	Head Mount Base Ass'y	1		
56 57	VYTH468-001	Spacer Spacer	1		
58	VKZ4514-001	Screw	2		
59	YK10P-AS406	P.Head	1		
	VGH0425-536	P/R& E.Head	1	B Mecha	

2-9 (No. 20180)

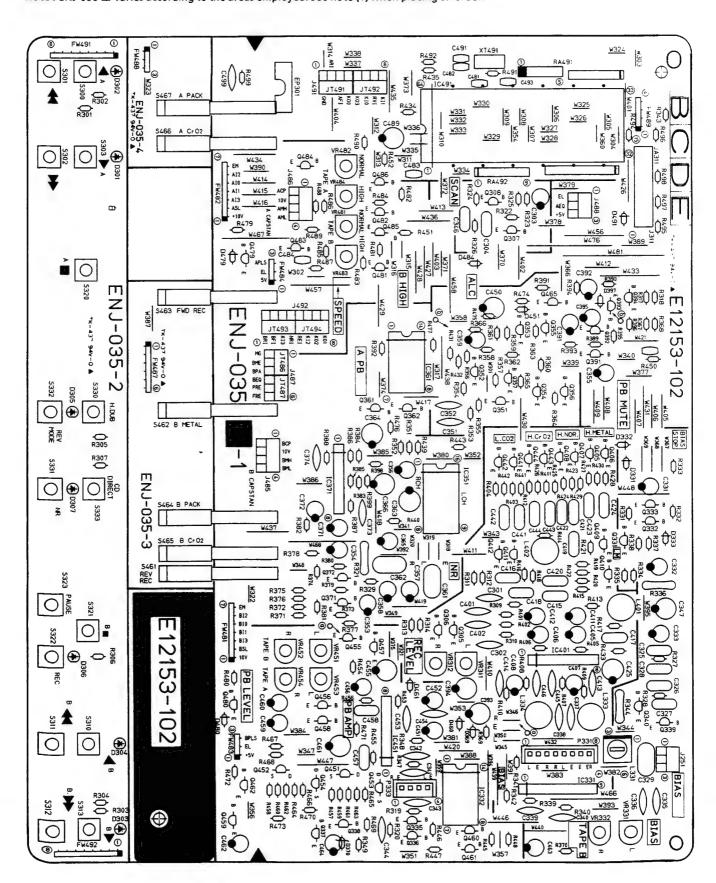
Item	Part Number	Part Name	Qʻty	Description	Areas
60 61 62 63 64	VKZ4291-005 VKP4208-00C VKW4883-001 VKW3008-028 VKP4209-00C	Head Screw P.R. Arm Ass'y Spring Spring P.R. Arm Ass'y	2 1 1 1 1 1	Right Left	
65 66 67 68	VKW4833-002 VKW3008-024 VKL6028-004 VKL5492-003 VKS4512-003	Spring Spring Door Safety Door Safety Guide Post	1 1 1 1 1	A Mecha B Mecha	
69 70 71 72 73	VKZ4549-00A E75216-004 SDST2604Z VKY4279-002 DN6851A	Cam Switch Spring Screw Pack Spring Holl IC	1 1 3 1 1		
74 75 76 77	E04365-003S VMW2741-001 VMC0007-007 VDM9130-002M-A VDM2187-MB02	Conector Circuit Board Conector Conector Wire Conector Wire	1 1 1 1 1 1 1 1	A Mecha B Mecha	
78 79 80 81 82	VKS3442-001 VKZ4129-001 VKZ4157-001 SDST2006Z VKW3002-266	Brake Arm Brake Rubber Brake Rubber Screw SPring	1 1 1 1 1		

2-10 (No. 20180)

Printed Circuit Board Ass'y and Parts List

■ ENJ-035 Cassette PC Board Ass'y

Note: ENJ-035 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENJ-035 B	the U.S.A.
ENJ-035 C	Other Countries, Austraria, Continental Europe (with LW), Switzerland (with LW), the U.K. (with LW)
ENJ-035 D	West Germany (with LW), Italy (with LW)

Transistors

Δ	ITEM	PART	NUMBE	RDE	s c	R	1 P	T	10	N	AREA
	9305		45 (VW)	SILIC			ROHM				
	2306		45 (VW)	SILIC			ROHM				
	Q307		35(Q,R)	SILIC	ON		MATS				Ì
	Q308		5(Q,R)	SILIC			RTAP				1
••••	Q331	250100	35(Q,R) 35(Q,R)	SILIC			MATS			•••••	·····
	Q333		35(Q,R)	SILIC			MATS				
	Q335	DTC14		SILIC			ROHM				
	Q336	DTC14	ES	SILIC	ON	- 1	ROHM				1
	Q337	DTC14	ES	SILIC	ON		ROHM				1
	Q338	DTC14		SILIC	ON		ROHM				
	Q339		85 (Q.R)	SILIC			MATS				
	Q340		85(Q,R)	SILIC			MATS Rohm		TIN		İ
	Q351		40(R/S)	SILIC	ON		ROHM				1
• • • • • •	Q352		40(R,S)	SILIC	ON		ROHM				
	Q354		40(R/S)	SILIC	DN		ROHM				
	Q355		40(R.S)	SILIC			ROHM				1
	Q356		40(R.S)	SILIC			ROHM				1
	Q357		40(R,S)	SILIC			ROHM				
****	Q361	DTC14		SILIC	ON		ROHM				
	Q362	DTC14		SILIC			ROHM				1
	Q371		445(VW)	SILIC			ROHM				Į.
	Q372		445 (VW)	SILIC			ROHM				
	Q391		445 (VW)	SILIC	ON		ROHM				
	Q392	DTC14	445 (VW)	SILIC	ON		ROHM				1
	0394	DTA14		SILIC	ON		ROHM				
	9405	DTC14		SILIC	ON		ROHM				1
	2406	DTC14		SILIC			ROHM				
	9407	DTC14	4TS	DILLI	UN		ROHM				
	9408	DTC14		SILIC			ROHM				
	2409	DTC14		SILIC			ROHM				
	Q410 Q411	DTC14 DTC14	415 4TC	SILIC	ON		ROHM				
•••••	9412	DTC14	41S	SILIC	ON	•••••	ROHM		•••••		
	9441	DTC14		SILIC			ROHN	1			
	9442	DTC14	4TS	SILIC	ON		ROHM	١			1
	9443	DTC14		SILIC			ROHM				1
	9444	DTC14		SILIC			ROH				
	2451		1(Q,R)	F.E.			MATS				
	9452		1(Q,R)	F.E.			MATS				
	Q453	1	1(Q,R)	F.E.			MATS				
	2454		1(Q,R)	F.E.			ROH		11:4		
•••••	9455	DICII	448	SILI	CON		ROH		•••••		
	Q456 Q457	DTC11		SILI	CON		ROH				
	Q458	DTC11		SILI			ROH				
	9459			SILI			ROH				
	9460		3(R,S)	SILI			ROH				
*****	9461	DTA11	445	SILI	CON		ROH				
	2462	DTC14		SILI			ROH	-			
	9465	DTA11		SILI			ROH				
	9479		445 (VW)	SILI			ROH				
	Q480	ZSD21	445(VW)	SILI	LUN		ROH	T		•••••	
	9481		44(Q,R)	SILI					ATIH		
	9482		44(Q,R)	SILI					ATIH		
	Q483		77(Q,R)	SILI			ROH				1
	9484		377(Q.R)	SILI			ROH				1
	Q485	DTC1		SILI	CON	• • • • • • • • • • • • • • • • • • • •	ROH				
	4485	01014		3161			9 111	•			1
	1	1									
		1						418	Simply War.	1014	Pire
						Λ	1; 15;	1.1	A L	11.1/	RITIS

A I SAFETY PIARTS

I.C.s

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	1							EC					I.C					A	81	22	1	c	UP	1	1	4	Č	ī	
	1					HI	AC	11	H				I.C			1	32	SI	81	40	1	6	HD	١	1	49	C	I	
						•п.	^'		•			•	1.0			. 1	36	31	,61	40	1	0	HU		1	47	٠,	1	

A :: SAFETY PARTS

Diodes

Δ	ITE	М	PA	R 7	r	N	U	M E	3 E	R	D	E	s	С	R	I	P	т	I	0	_	N	A	RI	EΑ
	D30	1	SL	H-:	34	D	:3	F			4.1					RO	нм								
1	030	2	SL	H-	34	D	3	F			4.1	.0					нм								
	D30	3	SL	H-	34	D	3	F			L.						HM						1		
1	030	4	SL	H-	34	Ð	3	F			L.1						HM								
l	030			H-							اديا						HM								
	D30			H-							L - !						HM								
	D30			H-			3	F			L - I						HM						-		
	033			\$1							SII						HM						ļ.		
	033			S1							SI						HM								
ļ	D33			S1							SI						HM								
1	D36			Z8							ZEI						HM						1		
	037	-		78		-	C				ZE						HM								
	039	-		S1							SI						HM								
	045			\$1							SI						HM						l		
ļ	D46			\$1							SI						HM	****					·		
	046			S1							SI						HM						1		
	047			\$1							SI						HM								
	048	0		331							SI						HM								
1	048	4	15	\$1	33	5					SI						HM								
	049	1	15	51	33	5					SI	LI	100	_			HM	FE			_			_	

Capacitors

Δ	ITEM	PART	NU	MB	ER	D	E	S	С	R	I	P	T	I	٥	N	ARE
	C301	QCY21	K-1	22			OOP		50	vc		CE	RAI	MI(:		
	C302	QCY21	K-1	22			OOP	F	_	VC			RAI		-		
	C303	QETB1	M-1	.05		1 M	F		_	٥V			EC.		2		
	C304	QFV81	1J-2	23			022			VC			FI				
	C322	QCF21F	P-22	3			221			OV.			RAI	*****			
	C325	QFN81					OOP		-	٥V			LA				
	C326	QFN81					OOP			٥V			LA				
	C327	QFN81					OOP			VO			LA				
	C328	QFV811					012		_	٥v			FI	LM			ł
	C329	QFP81					OOF	· F		0٧			LY				
	C331	QETB1				114			-	٥v			EC.				l
	C335	QETB1				1 M				٥v			.EC				
	C333	QETB1	EM-1	06		10				5 V			.EC				1
	C335	QCS21	H J - 1	01		10	OPF			٥٧		-	RA				
	C336	QCS21	HJ-1	01			OPF			٥v			RA	****			
****	C337	9CS21	HJ-1	01		10	OP		5	0 V			RA		-		
	C338	QCS21	HJ-1	101		10	OPI		5	0٧		CE	ERA	MI	С		1
	C339	QCY21	HK-1	102		10	OOF	F	5	٥٧		CE	ERA	ΜI	С		
	C340	QCY21	HK-	102		10	001	PF	5	٥v		CE	ERA	ΜĮ	C		
	C341	QCS21	HJ-3	331		33	OPI		5	٥v		CE	ERA	MI	C		
•••••	C342	QCS21	HJ-3	331		33	OPI	•	5	٥v		CE	RA	MI	C		1
	C343	QCS21				156	OP	F	5	0٧		ĊE	ERA	MI	С		l
	C344	QCS21	HJ-	561		56	OP	F	5	0 V		CE	ERA	MI	C		
	C346	QFV81				0.	02	MI	5	01		Τ.	.FI	LM			1
	C347	QETB1				ho	OM	F	1	6٧		E١	LEC	TR	0		
• • • • • •	C351	QCF21				b.	04	MI	5	OV		CI	RA	MI	c	•••••	1
	C352	QCF21				p.	04	7H1	5	OV		CI	ERA	MI	С		İ
	C353	QEK51	HM-	1056	;	1 M	IF		5	OV		EI	LEC	TR	0		1
	C354	QEK51	HM-	1056	6	12 M	l F		5	OV		EI	LEC	TR	0		1
	1 C355	QEK51	HM-	1056	;	11	F		5	OV			LEC				
•	C356	QEK51	HM-	1050	;	11 1				OV			LEC				
	C357	QETB1	EM-	106		10	MF			5 V			LEC				
	C358	QETB1	EM-	106			MF			5 V			LEC				1
	C359	QETB1	EM-	106			MF			5 V			LEC				1
	C361	QFV81	HJ-	224		ю.	.22	MF		٥٧			.FI				
	C362	QFV81	HJ-	224			.22		5	OV			. F I	_			
	C363	QETB1	HM-	475			.7M		5	٥v			LEC				1
	C364	QETB1	CM-	107			MOC			64			LEC				1
	C365	QETB1	HM-	475		4.	.7M	F	-	ov			LEC				
	C366	QETB1	CM-	107		ng	MUC	F		6 V			LEC				
•••••	C371	QETB1	HM-	105		111	1 F		_	0 V			LEC				
	C372	QETB1	HM-	105		11	4 F		5	0 V	•	E	LEC	TR:	0		
	C373	QCS21	HJ-	220			2PF			OV	•		ERA				
	C374	QCS21	HJ-	220			2 P F			OV			ERA				-
	C391	QETB1	EM-	106		10	MF		7	5 V		E	LEC	TR	0		
	C392	QETB1				10	MF		- 2	25 V	1	E	LEC	TR	0		
	C393	QETB1				10	MOC	F	1	164	1		LEC				1
	C394	QETB1	-	_		10	MOC	F	1	164	,	Ε	LEC	TR	0		1
	C395	QETB1	-				OMF			SOV			LEC				
1	C401	QCF21					.04			OV			ER/				
	C402	I QCF21					.04			οv			ER/				
	C405	QEK51			G		. 2M			SOV			LEC				
1	C406	QEK51					. 2M			50 V			LEC				1
l	C407	QEK51					. 2M			50 V			LEC				
ı	C408	QEK51					. 2M			50 V			LEC				1
i	C411	QEK5					OMF			161			LE				1

Capacitors

Δ	ITEM	PART	NUMBE	RDES	C R	рті	ОИ	AREA
	C412	QEK51	CM-106G	10MF	16V	ELECTRO		
ı	C413		HJ-271	270PF	50V	CERAMIC		
- 1	C414	QCS21	HJ-271	270PF	50V	CERAMIC		ł
- 1	C415	QFN81	HJ-562	5600PF	50V	MYLAR		
	C416	QFN81	HJ-562	5600PF	50V	MYLAR		
	C417	QFN81	HJ-682	6800PF	SOV	MYLAR		
- 1	C418	QFN81	HJ-682	6800PF	50V	MYLAR		
- 1	C419	QFV81	HJ-123	0.012MF	50V	T.FILM		
- 1	C420	QFV81	HJ-123	0.012MF	50V	T.FILM		
- 1	C421	QFN81	HJ-332	3300PF	50V	MYLAR		
	C422		HJ-332	3300PF	50V	MYLAR		1
- 1	C423		HJ-103	0.01MF	50V	T.FILM		
ı	C424		HJ-103	0.01MF	50V	T.FILM		
	C425		CM-107	100MF	16V	ELECTRO		1
i					50V	T.FILM		
	C441		HJ-123	0.012MF				
ļ	C442		HJ-123	0.012MF		T.FILM		1
- 1	C443		HJ-123	0.012MF	50V	T.FILM		1
	C444		HJ-123	0.012MF	50V	T.FILM		
- 1	C445	QCS21	HJ-470	47PF	50V	CERAMIC		1
	C446	QCS21	HJ-470	47PF	50V	CERAMIC		
	C450	QETB1	AM-476	47MF	10V	ELECTRO)	
	C451	QEK51	HM-225G	2.2MF	50V	ELECTRO	+	1
	C452	QEK51	HM-225G	2.2MF	50V	ELECTRO)	
- 1	C453	90521	HJ-101	100PF	50V	CERAMIC		
- 1	C454		HJ-101	100PF	50V	CERAMIC		1
	C455		AM-107	100MF	100	ELECTRO		
- 1	C456		AM-107	100MF	10V	ELECTRO		i .
- 1	C457		HJ-822	8200PF	50V	MYLAR	•	1
- 1	C458		HJ-822	8200PF	50V	MYLAR		1
j	C459		HM-105G	1MF	50V	ELECTRO		1
	C460		HM-1056	1MF	50V	ELECTRO		····
- 1	C461		CM-107	100MF	16V	ELECTRO		1
- 1	C462		HM-106	10MF	50V	ELECTRO		1
- 1	C463			LOME	50V	ELECTRO		
1			HM~106					
	C464		HM-106	10MF	50V	ELECTRO		
- 1	C481		CM-103	0.01MF	16V	CERAMIC		1
	C484		CM-103	0.01MF	16V	CERAMIC		1
- 1	C489		JM-227	220MF	6.3V			1
	C491		CM-103	0.01MF	16V	CERAMIC		
	C493		CM-103	0.01MF	16V	CERAMIC		
	C499	QCF21	HP-103	0.01MF	50V	CERAMIC	•	
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Resistors

Δ	ITEM	PART	NUMB	ER D	E S	C R	1	P	Т	1 0	N	AREA
	R301	QRD167	J-271	270		1/6	ni .	CA	RBO	N		
	R302	QRD167	J-271	270)	1/6	d	CA	RBO	N		
	R303	QRD167	J-271	270)	1/6	4	CA	RBO	N		
	R304	QRD167	J-271	270)	1/61	d	CA	RBO	N		į.
	R305	QRD167	J-561	560)	1/6	ď	CA	RBO	N		
	R306	QRD167	J-561	560)	1/6	4	CA	RBO	N		
	R307	QRD167	J-561	560)	1/6	d	CA	RBO	N		
	R309	QRD167	J-473	471	<	1/6	d	CA	RBO	N		
	R310	QRD167	J-473	471	<	1/6	ď	CA	RBO	N		
	R311	QRD167	J-103	101	<	1/61	d	CA	RBO	N		
	R312	QRD167	J-103	101	ζ	1/6	ď	CA	RBO	N		
	R313	QRD167	J-153	151	<	1/61	d	CA	RBO	N		
	R314	QRD167	J-153	151	<	1/6	4	CA	RBO	N.		
	R317	QRD167	J-163	161	<	1/6	4	CA	RBC	N		
	R318	QRD167	J-163	161	<	1/6	d	CA	RBO	N		
	R319	QRD167	J-563	561	<	1/6	4	CA	RBC	N		
	R320	QRD167		561	(1/6			RBC			
Δ	R321	QRZ007		22		1/4			SIB			1
	R322	QRD167	J-913	911	<	1/6	d		RBO			
	R323	QRD167		1 M		1/6			RBC			
	R324	QRD167		101		1/6			RBC			
	R325	QRD167		751	<	1/6			RBC			
	R326	QRD167		1 M		1/6			RBC			ļ
	R327	QRD167		471		1/6			RBO			1
	R328	QRD167		471		1/6			RBC			
	R329	QRD167		4.		1/6			RBC			
	R331	QRD167		3.3		1/6			RBC			
	R332	QRD167		3.3		1/6			RBC			
	R333	QRD167		100		1/6			RBC			i
****	R334	QRD167		620		1/6			RBO			
	R335	QRD167		470	J	1/6			RBC			
Δ	R336	QRZ007		10	_	1/4			SIB			
	R337	QRD167		470		1/6			RBO			
	R338	QRD167		330		1/6			RBO			
	R339	QRD167	J-473	471	<	1/6	.	CA	RBC	N		

Resistors

Δ	ITEM	PART	NUME		D E	s			P	т	ł	0	N	AREA
	R340	QRD167			47K		1/6			RBC				
	R341 R342	QRD167			10 10		1/6			RBC RBC				ļ
	R343	QRD167			2.2K		1/6			RBC				
Δ.	R344	QRD140			5.6		1/4	W		F . 0		RB()N	
- 1	R347 R348	QRD167			150K 150K		1/6			RBC RBC				
	R349	QRD167			22K		1/6			RBC				
	R351	QRD167			100K		1/6			RBC				
	R352 R353	QRD167			100K 15K		1/6			RBC		••••		
-	R354	QRD167			15K		1/6			RBC				1
í	R355	QRD167			27K		1/6			RBC				
	R356 R357	QRD167			27K 3.3K		1/6	5₩ Lu	CA	RBC RBC]
	R358	QRD167			3.3K		1/6		CA	RBC		••••		
	R359	QRD167			22K		1/6			RBC				
- 1	R360	QRD167			22K		1/6			RBC				Ì
	R361 R362	QRD167 QRD167			560 560		1/6			RBC RBC				
}	R363	QRD167			2.7K	•••••	1/6			RBO				[
	R364	QRD167	J-272		2.7K		1/6	W		RBO				
-	R365	QRD167			10K		1/6			RBO				
-	R366 R367	QRD167 QRD167		l	1M 4.7K		1/6			RBO RBO				
1	R368	QRD167			4.7K	•••••	1/6			RBO		• • • • •		**********
	R369	QRD167			1 K		1/6	W	ÇA	RBO	N			
1	R370	QRD167			1 K		1/6			RBO				
ĺ	R371 R372	QRD167 QRD167			5.6K 5.6K		1/6			RBO RBO				
١	R373	QRD167			10K		1/6			RBO				
	R374	QRD167			10K		1/6			RBO				
	R375	QRD167			22K		1/6			RBO				
	R376 R377	QRD167 QRD167			22K 10K		1/6	₩ Li		RBO RBO				
	R378	QRD167			10K	•••••	1/6	U		RBO				
	R379	QRD167			2.4K		1/6			RBO				
	R380	QRD167			2.4K		1/6			RBO				
	R381 R382	QRD167 QRD167			1 K 1 K		1/6		CA	RBO RBO				
	R383	QRD167			100K	• • • • • • •	1/6			RBO				***********
	R384	QRD167			100K		1/6			RBO				
l	R385 R386	QRD167 QRD167			6.8K 6.8K		1/6			RBO RBO				
	R387	QRD167			100K		1/6			RBO				
	R388	QRD167			100K		1/6			RBO			****	
l	R389	QRD167			220		1/6			RBO				
ł	R390 R391	QRD167 QRD167			220 5.6K		1/6			RBO RBO			i	İ
	R392	QRD167			5.6K		1/6			RBO				
	R393	QRD167	J-562		5.6K		1/6	W	CA	RBO	N			
	R394	QRD167			5.6K		1/6			RBO			ĺ	
	R395	QRD167 QRD167		Ė	10K 10K		1/6			RBO RBO				
i	R398	QRD167			22K		1/6			RBO				
I	R399	QRD167		-	22K		1/6			RBO				
١	R401	QRD167			33K		1/6			RBO RBO				
	R402 R403	QRD167 QRD167			33K 4.7K		1/6		-	RBO				
	R404	QRD167	J-472		4.7K		1/6			RBO				
	R405	QRD167	7-683	1			1/6	W	CA	RBO				
١	R406 R407	QRD167 QRD167			68K 15K		1/6			RBO RBO				
	R408	QRD167			15K		1/6			RBO				
	R409	QRD167	J-153	h	15K		1/6	W	CA	RBO	N			•••••
	R410	QRD167		ì	15K		1/6			RBO				
Į	R411 R412	QRD167			4.7K 4.7K		1/6			RBO RBO				
	R413	QRD167	J-182		1.8K		1/6	W		RBO				
	R414	QRD167			1.8K		1/6			RBO				
	R415 R416	QRD167 QRD167			510 510		1/6			RBO RBO			i	
	R417	QRD167			300		1/6			RBO				
	R418	QRD167	J-301		300		1/6	W	CAI	RBO	N			
- 1	R419	QRD167	J-302	- 1	3 K		1/6	W	CAL	880	N			

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Resistors

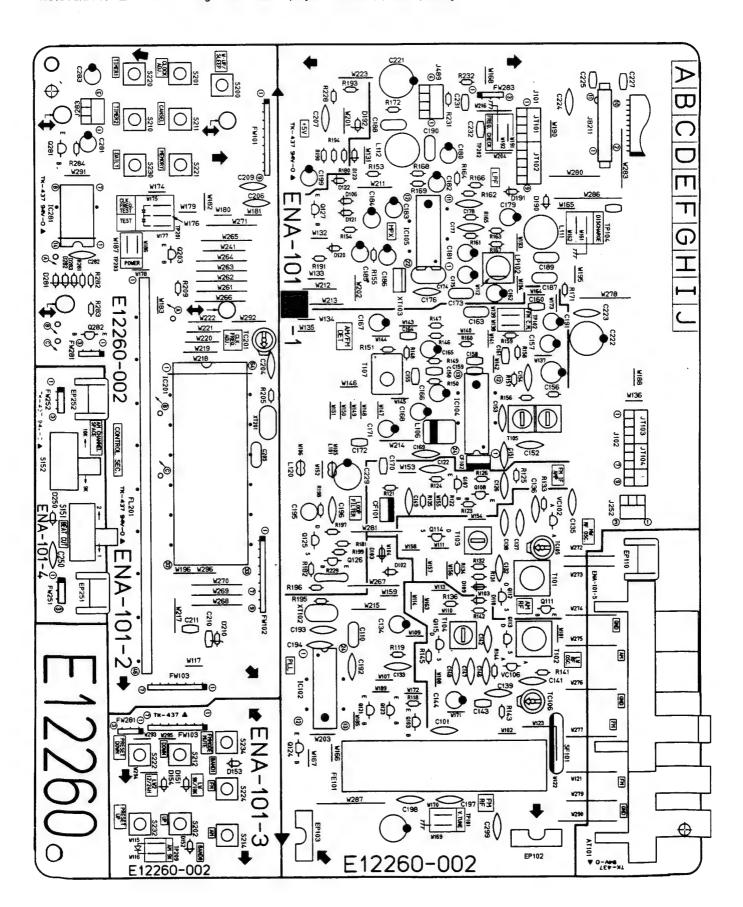
R44224 R44224 R644224 R644224 R644224 R644228 R644228 R644234 R64423 R6442 R64423 R6442 R64423 R6442 R64423 R64423 R64423 R64423 R64423 R64423 R64423 R6	QRD16 QRD16	7J-302 7J-242 7J-122 7J-122 7J-121 7J-151 7J-151 7J-202 7J-202 7J-203 7J-203 7J-103	NHT NNH TON SAN THE TRANSPORT	-4K -2K -2K -20 -550 -550 -550 -550 -550 -550 -550		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6	5 W 5 W 5 W 5 W 5 W 5 W 5 W 5 W 5 W 5 W	CA CA CA CA CA CA CA CA CA CA CA CA CA	RBBCCCRBBCCCBBCCBBCCBBCCBBCCBBCCBBCCBBC	N N N N N N N N N N N N N N N N N N N		
R4423 R4423 R4423 R4423 R4423 R4423 R4423 R4443 R4443 R4444 R7444 R744 R744	QRD16 QRD16	7J-242 7J-122 7J-122 7J-221 7J-251 7J-151 7J-151 7J-202 7J-474 7J-474 7J-103 7J-103 7J-103 7J-23 7J-103 7J-103 7J-103 7J-103 7J-103 7J-103 7J-224 7J-103 7J-224 7J-103 7J-224	NHTNNHHNNASHNH	24 K 22 K 22 C 25 C 26 C 27 C 27 C 27 C 27 C 28 C 28 C 28 C 28 C 28 C 28 C 28 C 28		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6		CA CA CA CA CA CA CA CA CA CA CA CA	RBBC RBBC RBBC RBBC RBBC RBBC RBBC RBBC	IN IN IN IN IN IN IN IN IN IN IN		
R422 R428 RR428 RR428 RR433 RR433 RR4433 RR4433 RR443 RR443 RR443 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445 RR445	QRD16 QRD16	7J-122 7J-221 7J-21 7J-21 7J-151 7J-151 7J-202 7J-202 7J-202 7J-203 7J-103 7J-103 7J-681 7J-683 7J-683 7J-223	T NNTT N S S T N T T T N S S T N T T	2K 20 50 50 50 6 70 70 70 70 80 80 86		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6		CA CA CA CA CA CA CA CA CA CA	RBC RBC RBC RBC RBC RBC RBC RBC RBC RBC	IN IN IN IN IN IN IN IN IN		
R428 RR428 RR4428 RR4438 RF4433 RF4433 RF4443 RF4444 RF4444 RF4445 RF4445 RF45 RF	GRD16 GRD16	7J-221 7J-251 7J-151 7J-151 7J-202 7J-474 7J-271 7J-103 7J-103 7J-103 7J-103 7J-681 7J-183 7J-224 7J-103 7J-224 7J-103 7J-224	NN 11 NN 4 4 N 11 11 N 4 6 11 N 11	20 20 50 50 50 60 70 70 70 70 80 80 86		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6		CAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	RBC RBC RBC RBC RBC RBC RBC RBC	N N N N N N N N N		
R4228 R4428 R4431 R4431 R44334 R44334 R4443 R4444 R4445 R4445 R4445 R445 R	QRD16 QRD16	7J-151 7J-202 7J-202 7J-474 7J-271 7J-103 7J-103 7J-223 7J-681 7J-183 7J-887 7J-183 7J-224 7J-103 7J-224 7J-103	HANNA AN THIN SO THAT	50 K K 70K 70K 70 0K 00 0K 2K 80 80		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6		CA CA CA CA CA CA CA CA	RBC RBC RBC RBC RBC RBC RBC RBC	N N N N N N N		
R428 R4430 R4431 R4431 R4434 R84434 R8443 R8444 R8444 R8444 R8444 R8444 R8444 R8444 R8444 R8445 R845 R8	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-151 7J-202 7J-474 7J-474 7J-474 7J-101 7J-103 7J-103 7J-223 7J-681 7J-681 7J-224 7J-224 7J-103	12.24 4 22 11 11 22 4 5 11 22 11	50 K 70K 70K 70 0K 0K 2K 80 80		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6		CA CA CA CA CA CA CA	RBC RBC RBC RBC RBC RBC RBC	N N N N N N N		
0123459012345567801234559012345556780123455901234555555555555555555555555555555555555	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-202 7J-474 7J-474 7J-271 7J-103 7J-103 7J-223 7J-681 7J-681 7J-183 7J-224 7J-103 7J-223	NN 4 4 N THE TRUE SET NOT	K K 70K 70K 70 0K 0K 2K 80 80		1/6 1/6 1/6 1/6 1/6 1/6 1/6 1/6	5 W 5 W 5 W 5 W	CA CA CA CA CA CA	RBC RBC RBC RBC RBC RBC	N N N N N		
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-474 7J-474 7J-271 7J-103 7J-103 7J-223 7J-681 7J-681 7J-183 7J-224 7J-103 7J-103 7J-103	20111122	70K 70K 70 0K 00 0K 2K 80 80		1/6 1/6 1/6 1/6 1/6 1/6	SW SW SW SW	CA CA CA CA	RBC RBC RBC RBC RBC	ON ON ON ON ON		
233459 4444444444455 4444444444555 45555789 45555789	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-474 7J-271 7J-103 7J-103 7J-223 7J-681 7J-681 7J-183 7J-183 7J-103 7J-103 7J-103	211122	70K 70 0K 00 0K 2K 80 80		1/6	. W . W . W . W	CA CA CA CA	RBC RBC RBC RBC	N N N N		
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-103 7J-101 7J-103 7J-223 7J-681 7J-183 7J-183 7J-103 7J-103 7J-103	10	0K 00 0K 2K 80 80		1/6	5 W 5 W 5 W	CA CA CA	RBC RBC RBC	N N N		
R4439 RR444435 64444444 6444444 6444444 644444 644444 6444	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-101 7J-103 7J-223 7J-681 7J-681 7J-183 7J-224 7J-103 7J-103 7J-223	61	00 0K 2K 80 80		1/6	SW SW	CA	RBC RBC	N N		
RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-223 7J-681 7J-681 7J-183 7J-224 7J-103 7J-103 7J-223	2: 6: 7: 7:	2 K 8 O 8 O 8 K	******	1/6	W	CA				
R44435 RRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRRR	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-681 7J-681 7J-183 7J-224 7J-103 7J-103 7J-223	61 21 11	80 80 8K		1/6			KDL	/N		1
R4423 R44456 RR44466 RR444651 RR44551 RR44556 RR44556 RR44558 RR44558 RR44558	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-681 7J-183 7J-224 7J-103 7J-103 7J-223	1 2 1	BO	******			CA	RBC			
R445 R446 R447 R448 R450 R451 R452 R453 R455 R455 R457 R458 R459	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-224 7J-103 7J-103 7J-223	2	BK		1/6	W		RBC			<u> </u>
R446 R447 R448 R450 R451 R452 R453 R454 R455 R456 R457 R458 R459	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-103 7J-103 7J-223	11			1/6	W	CA	RBC			
R447 R448 R450 R451 R452 R453 R454 R455 R456 R457 R458 R459	QRD16 QRD16 QRD16 QRD16 QRD16 QRD16	7J-103 7J-223	110	20K		1/6			RBC RBC			
R450 R451 R452 R453 R454 R455 R456 R457 R458 R459	QRD16 QRD16 QRD16 QRD16		12.	ΩK		1/6	W	CA	RBC			
R451 R452 R453 R454 R455 R456 R457 R458 R459	QRD16 QRD16 QRD16	//=//	2	2K 70		1/6	W	CA	RBC			
R453 R454 R455 R456 R457 R458 R459	QRD16		11			1/6			RBC RBC			
R454 R455 R456 R457 R458 R459	QRD16	7J-102		ĸ		1/6			RBC			
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R464 R465	QRD16	7J-512 7J-223		.1K 2K		1/6	5 W	CA	RBC			
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R473	QRD16	71-472	14	.7K		1/6			RB			
R474	QRD16	71-274	2	70K		1/4		*****	RBC			
R475 R476		7J-104 7J-103		OOK OK		1/6			RB(
R477		7J-103		OK		1/6			RB			
R479		7J-222		. 2K		1/6			RBO			1
R480		71-222	********	.2K		1/6			RBO	******		!
R482									-			
R483								-				
	QRD16	71-224										
R486	QRD16	71-472		.7K				CA	RB	ON	*******	
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R494	QRD16	7J-101	1	00		1/6	6 W	CA	RB	ON		1
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■ ENA-101 Tuner PC Board Ass'y

Note: ENA-101 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENA-101 A	the U.S.A.
ENA-101 B	Other Countries
ENA-101 C	Australia
ENA-101 D	Continental Europe (with LW)
ENA-101 E	West Germany (with LW)
ENA-101 F	the U.K. (with LW)
ENA-101 G	Italy (with LW)
ENA-101 📗	Switzerland (with LW)

Transistors

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A ISAFETY PARTS

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	C	1	0	3	1	\$	S	13	3								SI	L	10	ON			R	۱,	M							F
	0	1	0	3	1	S	S	13	3								SI	L	IC	ON			R	31	M							G
	C	1	0	3	1	S	S	13	3								SI	L	10	ON			R	9	M						l	I
	C	1	0	5	1	S	S	13	3	•••	•••						SI	Ë	IC	ON			R	O۲	M							
	C	1	0	9	1	S	S	13	3								SI	Ļ	10	ON			R	01	M						1	D
	D	1	0	9	1	S	S	13	3								SI	Ļ	10	ON			R	O١	ŀМ							E
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A : SAFETY PARTS

Capacitors

	ITEM	PART	NUMBER	DES	CRI	PTION	ARE
_				0.022MF	50V	CERAMIC	+
	C101	QCF21					
	C110	QCZ020		1.5MF	25V	CERAMIC	
	C122	QCF21H		0.022MF	50V	CERAMIC	-
	C126	QCF21F		0.022MF	50V	CERAMIC	
	C132	QCS21		560PF	50V	CERAMIC	
	C133	QCF21	1P-223	0.022MF	50V	CERAMIC	
	C134	QETB1	M-106	10MF	25V	ELECTRO	
	C135	QCC21	M-223	0.022MF	25V	CERAMIC	i
	C136	QCT260	H-180	18PF	SOV	CERAMIC	
	C137	QCT260	CH-221	220PF	50V	CERAMIC	
	C138	QCT260	H-241	240PF	50V	CERAMIC	
	C139	QCC211	EM-223	0.022MF	25V	CERAMIC	D
	C139	QCC21	EM-223	0.022MF	25V	CERAMIC	E
	C139	QCC21	EM-223	0.022MF	25V	CERAMIC	F
	C139	QCC21	EM-223	0.022MF	25V	CERAMIC	G
•••	C139		EM-223	0.022MF	25V	CERAMIC	I
	C141		HJ-270	27PF	50V	CERAMIC	D
	C141		HJ-270	27PF	50V	CERAMIC	E
	C141		HJ-270	27PF	50V	CERAMIC	F
	C141		HJ-270	27PF	SOV	CERAMIC	l G
	C141		HJ-270	27PF	50V	CERAMIC	G
	C142		HK-272	2700PF	50V	CERAMIC	D
	1				50V	CERAMIC	E
	C142		HK-272	2700PF			F
	C142		HK-272	2700PF	50V	CERAMIC	
	C142	QCY21	HK-272	2700PF	50V	CERAMIC	G
	C142	QCY21	HK-272	2700PF	50V	CERAMIC	Ī
	C143	QCHB1	EZ-223	0.022MF	25V	CERAMIC	D
	C143	QCHB1	EZ-223	0.022MF	25V	CERAMIC	E
	C143	QCHB1	EZ-223	0.022MF	25V	CERAMIC	F
	C143		EZ-223	0.022MF	25V	CERAMIC	G
	C143		EZ-223	0.022MF	25V	CERAMIC	1
	C144		EM-106	10MF	25V	ELECTRO	D
	C144		EM-106	10MF	25V	ELECTRO	E
			EM-106	10MF	25V	ELECTRO	F
	C144			10MF	250	ELECTRO	G
	C144		EM-106	10MF	25V	ELECTRO	ī
	C144		EM-106	1	50V	CERAMIC	Ď
	C146		CH-680	68PF	50V	CERAMIC	E
	C146		CH-680	68PF	50V	CERAMIC	F
	C146		CH-680	68PF		CERAMIC	6
	C146		CH-680	68PF	507		G
	C146		CH-680	68PF	50V	CERAMIC	D
	C147		CH-220	22PF	50V	CERAMIC	E
	C147		CH-550	22PF	50V	CERAMIC	F
	C147		CH-550	22PF	50V	CERAMIC	G
	C147		CH-220	22PF	50V	CERAMIC	
	C147		CH-550	22PF	50V	CERAMIC	
	C148		CH-121	120PF	SOV	CERAMIC	D
	C148		CH-121	120PF	50V	CERAMIC	E
	C148		CH-121	120PF	50V	CERAMIC	F
	C148		CH-121	120PF	50V	CERAMIC	G
	C148	QCT26	CH-121	120PF	50V	CERAMIC	I
	C149	QCF21	HP-223	0.022MF	50V	CERAMIC	
	C150	QCHB1	EZ-223	0.022MF	25V	CERAMIC	
	C151		HP-223	0.022MF	50V	CERAMIC	
	C152		HP-223	0.022MF		CERAMIC	
		1				SAFETY P	A : D3: 65

Capacitors

Δ	ITEM	PART	NUMBER	DES	C R	IPT	I O N	AREA
٦	C153	QCC21E		0.022MF	25V	CERAI		
	C154	QCF21H QCHB1E	IP-223	0.022MF	50V 25V	CERA		
	C156	QETB1	M-227	220MF	16V	ELEC	TRO	
	C157	QETB1		0.47MF	50V	CERA		ļ
	C158 C159	QCBB1	K-101 K-101	100PF 100PF	50V	CERA		
	C160	QCBB1	HK-221	220PF	50V	CERA	MIC	A
	C160		K-221	220PF 220PF	50V 50V	CERA		B
	C160		4K-221 4K-101	100PF	500	CERA		Ď
	C160	QCBB1	HK-221	220PF	50V	CERA		Ε
	C160		HK-101 HK-221	100PF 220PF	50V 50V	CERA		F
	C160	QCBB1	HK-101	100PF	500	CERA	MIC	ī
	C161		EZ-223	0.022MF	25V 25V	CERA		
	C162 C163		EM-106 HK-102	1000PF	50V	MYLA		
	C164	QCHB1	EZ-223	0.022MF	25V	CERA	MIC	
	C165		HM-474	0.47MF 2.2MF	50V 50V	ELEC		·····
	C166 C167		HM-225 HM-225	2.2MF	50V	ELEC		
	C168	QETB1	HM-475	4.7MF	50V	ELEC	TRO	
	C169		HP-223	0.022MF		CERA		1
	C170		EZ-223 EM-106	0.022MF	250	ELEC		1
	C172		CM-103	0.01MF	16V	CERA	MIC	1
	C173		HK-393	0.039MF		MYLA		A
	C173		HK-393 HK-223	0.039MF		MYLA MYLA		B
••••	C173		HK-223	0.022MF		MYLA		D
	C173	QFN81	HK-223	0.022M	50V	MYLA		E
	C173		HK-223 HK-223	0.022M		MYLA MYLA		F
	C173		HK-223 HK-223	0.022MI	50V	MYLA		I
••••	C174	QFLC1	HK-473	0.047M	50V	CERA		
	C175		EM-106 HK-102	10MF 1000PF	25V 50V	ELEC CERA		
	C177		HJ-821	820PF	50V	CERA	MIC	A
	C177		HJ-821	820PF	50V	CERA		B C
	C177		HJ-391 HJ-391	390PF 390PF	50V	CERA		0
	C177	QCS21	HJ-391	390PF	SOV	CERA	MIC	E
	C177		HJ-561 HJ-391	560PF 390PF	50V 50V	CERA		F G
••••	C177	QCS21	HJ-391	390PF	50V	CERA	MIC	I
	C178	QCS21	HJ-821	820PF	50V	CERA		A B
	C178		HJ-821 HJ-391	820PF 390PF	50V 50V	CERA		C
	C178	QCS21	HJ-391	390PF	50V	CERA	MIC	D
	C178	QCS21	HJ-391	390PF 560PF	50V 50V	CERA		E
	C178	1	HJ-561 HJ-391	390PF	50V	CERA		Ğ
	C178	QCS21	HJ-391	390PF	50V	CERA	MIC	1
	C179		HM-225	2.2MF	50V	ELEC	*****	
	C180		HM-225 EM-106	2.2MF	50V 25V	ELEC		
	C182		HM-225	2.2MF	50V	ELEC		
	C183	QETB1	HM-105	1MF	50V	ELEC		
••••	C184	QETB1	HM-105 HM-225	1MF 2.2MF	50V 50V			
	C186		HM-474	0.47MF	50V			
	C187	QFN81	HK-332	3300PF	50V	MYLA	R	
	C188		HK-332 HK-182	3300PF 1800PF	50V 50V			
••••	C190		HK-182	1800PF	50V			
	C191	QETB1	HM-475	4.7MF	50V			
	C192		EM-473 HJ-180	0.047M	F 25V 50V			
	C194	QCS21	HJ-180	18PF	500	CERA	MIC	
	C195	QEN51	HM-474	0.47MF 1000PF	50V 50V		POLE	
	C196		HK-102 HP-223	0.022M				
	C198	QCF21	HP-103	0.01MF	50V	CERA	MIC	
••••	C199		HM-475 CH-120	4.7MF 12PF	50V 50V			
	C205		02-155	1.5MF	25V	CERA	MIC	
	CS09	QCF21	HP-103	0.01MF	50V	CERA	-	
	C207		HP-223 HP-103	0.022M 0.01MF	50V 50V			
****	C210	QCVB1	CM-103	0.01MF	16V	CERA	MIC	1
	C211		CM-103	0.01MF	167			
	C221		JM-477 .CM-477	470MF	6.3 16V			
	C223	QCF21	HP-103	0.01MF	50V	CERA	MIC	
	C224		HP-102	1000PF	50V			
	C225		.HK-102 .CM-103	1000PF 0.01MF	50V 16V			
	C229		CM-477	470MF	16V	ELEC	TRO	-
	C231	QCVB1	CM-103	0.01MF	160			
	C232 C241		.CM-103 HP-223	0.01MF 0.022MF	16V 50V			
	C250		HK-471	470PF	50V	CERA	MIC	
	C281		HM-475	4.7MF	50V		TRO	
••••	C282		HP-103	0.01MF	50V			
	C283		HM-106 HP-103	0.01MF	50V			
	1	1						

Resistors

	ITEM	FART	NUMBER	DES	C R I	PTION	AREA
	R118		7J-332	3.3K	1/6W	CARBON	
	R119 R121		7J-221 7J-391	220 390	1/6W 1/6W	CARBON	
	R122		71-272	2.7K	1/6W	CARBON	1
1	R123		7J-102	1K	1/6W	CARBON	
	R124		7J-681	680	1/6W	CARBON	
Ì	R125		73-332	3.3K	1/6W	CARBON	
1	R126		7J-221	220 330	1/6W 1/6W	CARBON	
	R131		7J-331 7J-103	10K	1/6W	CARBON	
• • •	R133		71-473	47K	1/6W	CARBON	1
	R134		7J-103	10K	1/6W	CARBON	D
	R134		7J-103	10K	1/6W	CARBON	E
	R134		7J-103	10K 10K	1/6W	CARBON CARBON	F G
	R134		7J-103 7J-103	10K	1/6W	CARBON	I
	R135		71-470	47	1/6W	CARBON	_
1	R136		7J-103	10K	1/6W	CARBON	İ
	R141		71-472	4.7K	1/6W	CARBON	D
	R141		7J-472 7J-472	4.7K	1/6W	CARBON	E
	R141		71-472	4.7K	1/6W	CARBON	G
	R141		71-472	4.7K	1/6W	CARBON	I
	R142		7J-331	330	1/6W	CARBON	D
	R142		7J-331	330	1/6W	CARBON	F
į	R142 R142		7J-331 7J-331	330 330	1/6W 1/6W	CARBON	6
	R142		7J-331	330	1/6W	CARBON	1
	R143		7J-103	10K	1/6W	CARBON	D
	R143		7J-103	10K	1/6W	CARBON	E
	R143		7J-103	TOK	1/6W	CARBON	F G
	R143		7J-103 7J-103	10K	1/6W 1/6W	CARBON	I
	R144		7J-103 7J-473	47K	1/6W	CARBON	D
	R144		71-473	47K	1/6W	CARBON	E
	R144	QRD16	71-473	47K	1/6W	CARBON	F
	R144		71-473	47K	1/6W	CARBON	G
	R144		7J-473	47K	1/6W	CARBON	I D
	R145 R145		7J-103 7J-103	10K 10K	1/6W 1/6W	CARBON	E
	R145		7J-103	10K	1/6W	CARBON	F
	R145		71-103	10K	1/6W	CARBON	G
	R145		7J-103	10K	1/6W	CARBON	I
	R146		7J-560	56	1/6W	CARBON	
	R147		7J-103 7J-103	10K	1/6W	CARBON	
	R149		7J-223	22K	1/6W	CARBON	
	R150	QRD16	7J-103	10K	1/6W	CARBON	
	R151		71-222	2.2K	1/6W	CARBON	1
	R153	QRD14	7J-103 7J-103	10K	1/6W	CARBON	
	R155		71-562	5.6K	1/6%	CARBON	
	R156		71-822	8.2K	1/6W	CARBON	1
	R157		7J-103	10K	1/68	CARBON	.
	R158		7J-183	18K	1/6₩	CARBON	A
	R158 R158		7J-273 7J-273	27K 27K	1/6W 1/6W	CARBON CARBON	B C
	R158		7J-273 7J-273	27K	1/6W	CARBON	٥
	R158		71-273	27K	1/6₩	CARBON	E
	R158	QRD16	7J-273	27K	1/6W	CARBON	F
	R158		7J-273	27K	1/6W	CARBON	G
	R158		7J-273 7J-561	27K 560	1/6W 1/6W	CARBON	I
	R159 R160		7J-562	5.6K	1/6W	CARBON	A
	R160		7J-562	5.6K		CARBON	В
•••	R160		7J-183	18K	1/6W	CARBON	C
	R160		7J-183	18K	1/6W	CARBON	l D
	R160		7J-183	18K	1/6W	CARBON	E F
	R160 R160		7J-822 7J-183	8.2K 18K	1/6W 1/6W	CARBON CARBON	G
••	R160		7J-183	18K	1/6W	CARBON	I
	R161	QRD16	71-823	82K	1/6W	CARBON	A
	R161		7J-823	82K	1/6W	CARBON	В
	R161		7J-124 7J-124	120K	1/6W	CARBON CARBON	C
••	R161 R161		7J-124	120K	1/6W	CARBON	D E
	R161	QRD16	7J-823	82K	1/6W	CARBON	F
	R161		71-124	120K	1/6W	CARBON	G
	R161		7J-124 7J-823	120K	1/6W 1/6W	CARBON	I A
••	R162		7J-823	BZK	1/6W	CARBON	В В
	R162		71-124	120K	1/6W	CARBON	C
	R162	QRD16	7 J-124	120K	1/6W	CARBON	D
	R162		71-124	120K	1/6W	CARBON	E
٠.	R162		7J-823	82K	1/6₩	CARBON	F
	R162 R162		7J-124 7J-124	120K 120K	1/6W 1/6W	CARBON CARBON	I
	R163		73-124	4.7K	1/6W	CARBON	Ā
	R163	QRD16	71-472	4.7K	1/6W	CARBON	В
	R163		7J-392	3.9K	1/6W	CARBON	c
	R163		71-392	3.9K	1/6₩	CARBON	D
• • •		URDI6	7J-392	3.9K	1/6W	CARBON	E
	R163	QDD44	7.1-300				
	R163 R163		7J-392 7J-392	3.9K 3.9K	1/6W 1/6W	CARBON	6

(No. 20180) 2-17

Resistors

7	ITEM	PART	NUMBER	DES	CRI	PTION	AREA
	R164	QRD167		4.7K	1/6W 1/6W	CARBON	A B
	R164	QRD167		4.7K 3.9K	1/6W	CARBON	č
1	R164	QRD167		3.9K	1/6W	CARBON	D
1	R164	QRD167		3.9K	1/6W	CARBON	E
	R164		71-392	3.9K	1/6W	CARBON	F
	R164		71-392	3.9K	1/6₩	CARBON CARBON	G
	R164 R165		7J-392 7J-184	3.9K 180K	1/6W 1/6W	CARBON	À
	R165		71-184	180K	1/6W	CARBON	8
	R165		7J-274	270K	1/6W	CARBON	С
	R165		71-274	270K	1/6W	CARBON	D
	R165		71-274	270K	1/6W	CARBON CARBON	E
	R165		7J-274	270K 270K	1/6W 1/6W	CARBON	G
•••	R165		7J-274	270K	1/6W	CARBON	1
	R165 R166		7J-274 7J-184	180K	1/6W	CARBON	Ā
	R166		7J-184	180K	1/6W	CARBON	В
	R166		71-274	270K	1/6₩	CARBON	С
	R166		7J-274	270K	1/6W	CARBON	D
	R166		71-274	270K	1/6W	CARBON	1 8
	R166		7J-274	270K	1/6₩	CARBON	F
	R166		7J-274	270K	1/6W 1/6W	CARBON	1
	R166	1	7J-274 7J-393	270K 39K	1/6W	CARBON	Ā
	R167		7J-393	39K	1/6W	CARBON	В
	R167		71-473	47K	1/6W	CARBON	С
	R167		71-473	47K	1/6W	CARBON	D
	R167	QRD16	71-473	47K	1/6W	CARBON	E
	R167	QRD16	7J-473	47K	1/6W	CARBON	F
	R167		71-473	47K	1/6W	CARBON	I G
	R167		7J-473 7J-103	47K 10K	1/6W 1/6W	CARBON	1
	R168		73-103	10K	1/6W	CARBON	
	R171		71-682	6.8K	1/6W		
••••	R172		71-682	6.8K	1/6W	CARBON	
	R180		7J-103	10K	1/6W	CARBON	i
	R181		7J-222	2.2K	1/6W	CARBON	
	R182		7J-181	180	1/6W	CARBON	1
• • • •	R190		7J-103 7J-562	10K	1/6₩	CARBON CARBON	
	R193	1	71-103	10K	1/6W	CARBON	
	R194		7J-103	10K	1/6W	CARBON	
	R195	QRD16	71-473	47K	1/6W	CARBON	
	R196		7J-103	10K	1/6W	CARBON	A
	R196		71-103	10K	1/6W 1/6W	CARBON CARBON	B C
	R196		7J-103 7J-222	2.2K	1/6W	CARBON	D
	R196		71-222	2.2K	1/6W	CARBON	Ε
	R196		71-222	2.2K	1/6W	CARBON	F
	R196		71-222	2.2K	1/6W	CARBON	G
	R196		7J-222	2.2K	1/6W	CARBON	1
	R197		7J-222	2.2K	1/6W	CARBON CARBON	A
	R198		57J-332	3.3K	1/6W 1/6W	CARBON	B
•••	R198		57J-332 57J-332	3.3K	1/6W	CARBON	Č
	R198		57J-822	8.2K	1/68	CARBON	D
	R198		57J-822	8.2K	1/6W	CARBON	E
	R198		57J-822	8.2K	1/6W	CARBON	F
	R198		57J-822	8.2K	1/6W	CARBON	
	R198		57J-822	8.2K	1/6W	CARBON	1
	R199		67J-472 67J-47 3	4.7K	1/6W 1/6W	CARBON CARBON	
	R209		57J-104	100K	1/6W	CARBON	
	R228		671-222	2.2K	1/6W	CARBON	
Δ	R229	QRD1	4CJ-220S	10K	1/4W	UNF.CARBON	
	R231	QRD1	671-103		1/6W		
	R232		67J-153	15K 100K	1/6W	CARBON	
	R281		67J-104 67J-104	100K	1/6W	CARBON	
• • • •	R283		67J-104	100K	1/6W		
	R284		671-474	470K	1/6W		
	1						
	l .						

Others

Δ	ITEM	PART NUMB	SER DESCRIPTION AREA
\neg		E12260-002	CIRCUIT BOARD
ĺ	J252	EMV7122-103	CONNECTOR B
- }	J283	EMV7122-103	CONNECTOR
- 1	J489	EMV7122-004	CONNECTOR
- 1	L101	EQL4004-1R0	INDUCTOR
	L106	EQL3001-102	
- [L111	EQL2103-393	INDUCTOR
1	L112	EQL2103-393	INDUCTOR
ì	L120	EQL4004-180	INDUCTOR
	L120	EQL4004-1R0	INDUCTOR
	S151	QSS6A12-E01	SLIDE SWITCH
- 1	\$152	QSS6A12-E01	SLIDE SWITCH B
	5200	ESP0001-018	TACT SWITCH
- 1	\$200	ESP0001-018	TACT SWITCH
	\$202	ESP0001-018	1
	\$210	ESP0001-018	
1	5211	ESP0001-018	
	\$212	ESP0001-018	1
	5214	ESP0001-018	
	\$220	ESP0001-018	
	S221	ESP0001-018	
	\$222	ESP0001-018	
	S224	ESP0001-018	
	\$230	ESP0001-018	
	\$232	ESP0001-018	
	S234	ESP0001-018	
	T101	EGR1111-014	1
	T102	EQR1111-005	
	T102	EQR1111-005	ļ
	T103	EQR1207-015	
		EQR1307-009	
	T104		
	T104	EQR1307-009	
		EQR1307-009	
	T104	EGR1307-009	
	T105	EQT2140-017	
	T107	ECB1560-008	
• • • • •	AT101	EMB41YV-401	
	AT101	EMB41YV-401	
	AT101	EMB41YV-401	III IIII IIII
	AT101	EMB41YV-401	
	AT101	EMB41YV-301	
••••	AT101	EMB41YV-401	
	AT101	EMB41YV-301	K ANTENNA TERMINAL G
	AT101	EMB41YV-301	IK ANTENNA TERMINAL I
	CF101	ECB2123-006	
	CF101	ECB2123-006	
****	CF101	ECB2123-006	SR CERAMIC FILTER C
	CF101	ECB2118-006	
	CF101	ECB2118-006	
	CF101	ECB2118-006	SR CERAMIC FILTER F

Others

Δ	ITEM	PART NUMI	BER D	E S	C R	1 1	T	1 0	N	AREA
_	CF101	ECB2118-006	R CE	RAMIC	FIL	TER				1
ŀ	CF102	ECB2123-006		RAMIC		TER				A
	CF102	ECB2123-006	R CER	RAMIC		TER				В
	CF102	ECB2123-006	R CER	RAMIC	FIL	TER				С
l	CF102 CF102	ECB2118-006	R CE	RAMIC	FIL	TER				D
	CF102	ECB2118-006		RAMIC	FIL	TER				E
	CF102	ECB2118-006		RAMIC		TER				F
	CF102	EC82118-006		RAMIC		TER.				G
	CF102	ECB2118-006		RAMIC		TER				I
	EP102	E70859-001			LATE					
	EP103	E70859-001			LATE					
	EP110 EP251	E70225-001 E70225-001		RTH P	LATE					
	EP252	E70225-001			LATE					
	FE101	EAF2203-001			ND	•				A
******	FE101	EAF2203-001			ND				******	В
	FE101	EAF2203-001	FRO	ONT E	ND					C
	FE101	EAF2203-001	FR	ONT E	ND					D
	FE101	EAF2203-002			ND					Ε
	FE101	EAF2203-001	FRI	ONT E	ND					F
	FE101	EAF2203-002	1		ND					G
	FE101	EAF2203-001			ND					1
	FL201 FS201	ELU0001-101 E3400-449		TUBE						
	FW001	EWP902-015	FL		RE					
	FW101	EWR398-25LS			RE	•••••				
	FW102	EWR37B-25LS	1							A
	FW102	EWR398-25LS								B
	FW102	EWR378-25LS								c
	FW102	EWR378-25LS			RE					D
*****	FW102	EWR378-25LS			RE					Ē
	FW102	EWR378-25LS			RE					F
	FW102	EWR378-25LS		IW TA	RE					G
	FW102	EWR378-25LS	T FLI	AT WI	RE					1
	FW103	EWR378-08SS	T FL	AT WI	RE					
	FW251	EWR338-08LS			RE					
	FW252	EWR338-30LS			RE					8
	FW281	EWR33B-20SS			RE					
	FW283	EWR33B-25LS								
	JB211 JT101	EMV7130-011 EMV7122-004		NNECT NNECT						••••••
	JT102	EMV7122-004		NECT						
	JT103	EMV7122-004		NECT						
	JT104	EMV7122-103		NECT						A
	JT104	EMV7122-005								
	J T104	EMV7122-103	COI	INECT	OR	********	*******			B C
	JT104	EMV7122-103		NECT						D
	JT104	EMV7122-103		NECT						£
	JT104	EMV7122-103		NECT						F
	J T104 J T104	EMV7122-103 EMV7122-103		NECT						G
	LP102	EQF01C2-001				1 755	,			E
	LP102	EQF0102-001		PAS						G
	SF101	EQF0201-006	BA			ILTE				E
	SF101	EQF0201-006	BAI			ILTE				G
	TC105	ENZ1003-006	*********	MMER						
	TC106	ENZ1003-006		MMER						D
	TC106	ENZ1003-006		MMER						E
i	TC106	ENZ1003-006		MMER						F
]	TC106 TC106	ENZ1003-006	TR	MMER		*****				G
		ENZ1003-006	TRI	MMER						I
	T C 2 0 1	ENZ1003-015		MMER						
	XT102	ECX0007-200		ONAT						
	XT103	ECX0000-456		ONAT						
	XT201	ECX4194-304	UF RES	TANGE	UR					

A HISIA FETTY PIARTIS

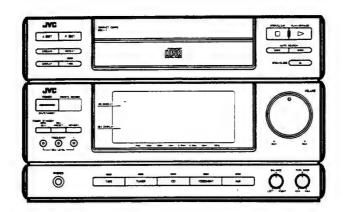
-MEMO-



JVC

SERVICE MANUAL

AX-MX1BK UNIT No. AX-MX1LBK (FOR CA-MX1BK/LBK)





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Safety Precautions

- 1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
- 2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
- 3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (\triangle) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
- 4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
- 5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

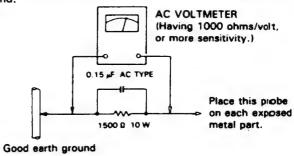
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current
 from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the
 chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- · Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

- 1. This equipment has been designed and manufactured to meet international safety standards.
- 2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
- 3. Repairs must be made in accordance with the relevant safety standards.
- 4. It is essential that safety critical components are replaced by approved parts.
- 5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

- 1. CLASS 1 LASER PRODUCT
- DANGER: Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
- 3. CAUTION: There are no serviceable parts inside the Laser Unit.
- 4. CAUTION: Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
- 5. CAUTION: The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
- CAUTION: If safety switches malfunction, the laser is able to function.
- CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

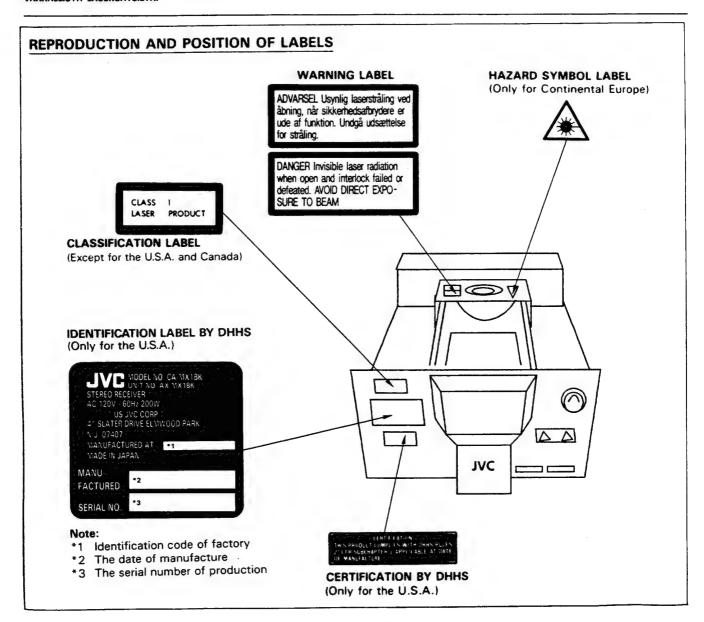
VARNING: OSYNLIG LASERSTRÄLNING UPP-STÅR VID KOMPONENTENS ÖPPNING NÄR SÄKERHETSBRYTAREN ÄR FRÅNSLAGEN. ADVARSEL: USYNLIG LASERSTRÄLING VED ÄBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÄLING.

ÅPNING NÅR SIKKERHETSBRYTEREN ER AVSLOTT.

ADVARSEL: USYNLIG LASERSTRÄLING VED

UNNGÅ UTSETTELSE FOR STRÅLING.

VAROITUS: LAITE SISÄLTÄÄ LASERDIODIN, JOKA LÄHETTÄÄ (NÄKYMÄTÖNTÄ) SILMILLE VAARALLISTA LASERSÄTEILYÄ.



Specifications

CD / Amplifier Component	Dimensions	10-7/8x6-3/4x12-3/8 inches (275x170x314 mm)
	Dimensions	· ·
	Weight	15.0lbs (6.8kg)
Ampifier	Output Power	Main (SPEAKERS A): 30 watts per channel, min. RMS, both channels driven into 8 ohms, from 20Hz to 20kHz, with no more than 0.9% total harmonic distortion.
		Subwoofer (SPEAKERS B): 20 watts per channel, into 3 ohms, at 80Hz, with 0.9% total harmonic distortion.
	Total Harmonic Distortion at Half-Rated Power	0.3%
	Input Sensitivity/ Impedance (1kHz) VIDEO/DAT, AUX	300mV/40k ohms
	SEA Center Frequencies	63, 160, 400, 1k, 2.5k, 6.3k, 16kHz
	SEA Control Range	± 10dB
Compact Disc Player	Dynamic Range (1kHz)	90dB
	Signal-to-Noise Ratio	100dB
	Frequency Response	5Hz-20kHz
	Wow and Flutter	Unmeasurable
Tape Deck / Tuner Component	Dimensions	10-7/8x6-3/4x10-3/4 inches (275x170x273 mm)
	Weight	7.3 lbs (3.3 kg)
Tape Deck	Frequency Response	Metal : 30-17,000Hz CrO2 : 30-16,000Hz Normal: 30-15,000Hz
	Wow and Flutter	0.08% (WRMS)
FM Tuner	Usable Sensitivity	0.95µV/75 ohms (10.8dBf)
	Signal-to-Noise Ratio (1HF-A Weighted)	MONO (at 85dBf) 80dB
		STEREO (at 85dB) 73dB
General	Power Requirements Power Consumption	AC120V ~, 60 Hz 200 watts

Design and specifications subject to change without notice.

Explanation of Power Engine

1. Outline

Power engine is meaning of blower which gives a breeze to the heat sink by vibration such as a speaker's corn.

This is installed under the heat sink and it is cooled compulsorily.

By using the power engine, the heat sink dimensions are able to make a 1/4 than normal venturation's heat sink, and then it is possible to make a small size amplifier.

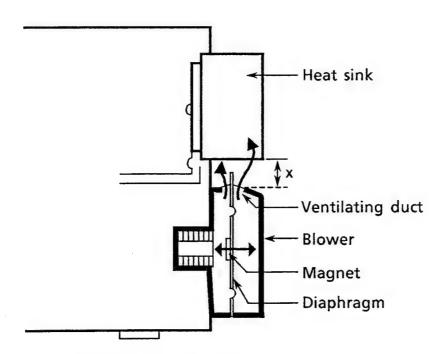
Microprocessor detects the temperature of heat sink through thermistor, and the breeze which is three types blows the heat sink.

2. Principle

The temperature of the heat sink is detected a changed resistor's value of the thermistor and the signal inputs to microprocessor. The microprocessor judges the heat sink temperature and selects a suitable operation from 6 steps, and then a driving signal goes to power engine.

3. Power engine operations

"Temperature"	"Operation"
~50°C	Power engine off
$50^{\circ}\text{C}\sim75^{\circ}\text{C}$	10Hz
75°C~100°C	14Hz
100°C~120°C	16Hz
120°C~150°C	Speaker relay off
150°C∼	Power primary off



Structure of Power Engine

Description of Major LSIs

■ µPD75106CW168(IC502): SYSTEM CONTROLLER

1. Terminal Layout

DCS INPUT			64	GND
DC2 INPUT	1	•	-	GND
	3		63 62	1/0/ ///
RM IN	_			VOL IND
1044 104	4		61	VOL DOWN
	5		60 59	VOL UP
	6		58	
75145.00	7		57	TARCUNO.
TEMP IN SYS / CONN	8		56	TAPE IND
SYS / CONN	-			COIND
	10		55	
RMIND	11		54	VIDEO/DAT IND
MUTE	12		53	AUX IND
	13	μPD75106CW-168	52	SEA IND
TC9 1645TB	14	pi D/3100C44-100	51	LC7522CLK
	15		50	LC7522DATA
TC9 163STB	16		49	SPK2
TC9 163CLK	17		48	SPK1
PROT IN	18		47	XI
DCS OUT	19		46	X2
KEY OUT2	20		45	RESET
KEY OUT 1	21		44	
KEY OUTO	22		43	f
KEY IN3	23		42	
KEY IN2	24		41	
KEY IN 1	25		40	
KEY INO	26		39	
DECK RESET	27		38	TUNER RESET
DECKINH	28		37	TUNER INH
CD RESET	29		36	AC OUT
CD INH	30		35	FL ON
	31		34	
+ 5V	32		33	P. ENGINE

2. KEY matrix

	KEY IN 0	KEY IN 1	KEY IN2	KEY IN3
KEY OUT 0	AUX	TUNER	MEMORY	POWER
KEY OUT 1	VIDEO / DAT	TAPE	SEA PRESET	SEA
KEY OUT 2	CD	fΔ	f	f∇

3. Pin Function Description

Pin NO.	symbol	1/0	Function and Operations	Pin NO.	symbol	1/0	Function and Operations
1	DCS INPUT	-	Compulink signal input	33	P.ENGINE	0	Power engine controll signal output
2		1	Connected to GND	34		-	Non connect
3	RM IN	_	Remote controll signal input	35	FLON	0	FL ON signal output
4	INH IN	T	System inhibit signal input	36	AC OUT	0	Power primary OFF signal
5			Connected to GND	37	TUNER INH	0	Tuner inhibit signal output
6		-	Connected to GND	38	TUNER RESET	0	Tuner reset signal output
7		-	Connected to GND	39		-	Non connect
8	TEMPIN	I	Temprature detecting port	40		-	Non connect
	SYS/CONN	1	System connecting check port	41		-	Non connect
10		-	Pull up(+5V)	42		-	Non connect
11	RM IND	_	Non connect	43			Non connect
	MUTE	0	Mute signal ouput	44		-	Non connect
13			Non connect	45	RESET	T	System reset signal input
	TC9 1635TB	0	Strobe signal output (To TN9163N)	46	X2	0	Clock oscillation output
15		-	Connected to GND	47	X1	1	Clock oscillation input
16	TC9 163DATA	0	Serial data output (To TN9163N)	48	SPK 1	0	Speaker relay on signal output
	TC9 161CLK	0	Clock signal output (To TN9163N)	49	SPK 2	-	Non connect
	PROT IN	_	Signal from protector	50	LC7522DATA	0	Serial data output (To LC7522)
	DCS OUT	Ö	Compulink signal output	51	LC7522CLK	0	Clock signal output (To LC7522)
	KEY OUT 2	0	Key matrix output		SEA IND	0	SEA indicator signal output
21	KEY OUT 1	0	Key matrix output	53	AUX IND	0	AUX indicator signal output
	KEY OUT D	0	Key matrix output	54	V/DAT IND	0	VIDEO / DAT indicator signal output
	KEY IN 3		Key matrix input	55	CD IND	0	CD indicator signal output
	KEY IN 2		Key matrix input	56	TUNER IND	0	TUNER indicator signal output
	KEY IN 1	1	Key matrix input	57	TAPE IND	0	TAPE indicator signal output
	KEY IN 0	Ι	Key matrix input	58		-	Non connect
	DECK RESET	0	Deck reset signal output	59		-	Non connect
28	DECK INH	0	Deck inhibit signal output	60	VOL UP	0	Volume up signal output
29	CD RESET	0	CD reset signal output	61	VOL DOWN	0	Volume down signal output
	CD INH	0	CD inhibit signal output		VOL IND	-	Non connect
31		-	Non connect	63		-	Non connect
32	Vcc	_	Power supply voltage (+5V)	64	GND	-	

■ HD614081SB22(IC951): CD SYSTEM CONTROLLER

1. Terminal Layout

3G	1		64	4G
2G	2		63	5G
1G	3		62	6G
a1	4		61	7G
ы	5		60	8G
fi	6		59	9G
g1	7		58	10G
c1	8		57	11G
e1	9		56	DCS OUT
d1	10		55	DCS IN
a2	11		54	L.ON
b2	12		53	GND
12	13		52	OSC 2
g2	14	HD614081SB22	51	OSC 1
c2	15		50	TEST
e2	16		49	RESET
d2	17		48	KEY IN 3
TEST	18	Top View	47	KEY IN 2
- VDISP	19	Top there	46	KEY IN 1
×	20		45	KEY IN 0
POFF	21		44	
	22		43	
R/W	23		42	
CLSW	24		41	
OPSW	25		40	KEY OUT 2
RSW	26		39	KEY OUT 1
INH	27		38	KEY OUT 0
CLOSE	28		37	FADE
OPEN	29		36	WQ
TLOF	30		35	so
GU	31		34	S1
vcc	32		33	SCK

2. Key Matrix

	KEY IN 0	KEY IN 1	KEY IN2	KEY IN3
KEY OUT 0	_		FADE	TIME
KEY OUT 1	₩	144	REPEAT	SIDE A/B
KEY OUT 2	PLAY / PAUSE	STOP CLR	PROG EDIT	AUTO EDIT

3. Pin Function Description

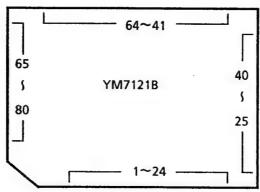
Pin NO.	symbol	1/0	Function and Operations	Pin NO.	symbol	1/0	Function and Operations
1	3G	0	FL grid control output		sck	0	Clock output
2	2G	0	FL grid control output	34	SI	0	Serial data output
3	16	0	FL grid control output	35	so	1	Serial data input
4	a1	0	FL segment control output		wq	1/0	Write request input
5	b1	0	FL segment control output	37	FADE	0	FADE INDICATOR OUTPUT
6	(1	0	FL segment control output	38	KEY OUT 0	0	Key matrix output
7	g1	0	FL segment control output	39	KEY OUT 1	0	Key matrix output
8	c1	0	FL segment control output	40	KEY OUT 2	0	Key matrix output
9	e1	О	FL segment control output	41		-	Non connect
	d1	0	FL segment control output	42		-	Non connect
11	a2	0	FL segment control output	43			Non connect
12	b2	10	FL segment control output	44		-	Non connect
13	f2	0	FL segment control output	45	KEY IN O	1	Key matrix input
14	g2	0	FL segment control output	46	KEY IN 1	1	Key matrix input
15	2		FL segment control output	47	KEY IN 2	1	Key matrix input
16	e2	0	FL segment control output	48	KEY IN 3	I	Key matrix input
17	d2	10	FL segment control output	49	RESET	1	Reset signal input
18	TEST	T	Entering test mode with TEST(L)	50	TEST		PULL UP (+ 5V)
19	- VDISP	T	Power supply for FL display	51	OSC 1	1	Clock oscillation input
20	×	0		52	OSC 2	0	Clock oscillation output
21	POFF	0	CD OFF signal	53	GND		
22		1-	Non connect	54	L.ON	0	Turns on laser
23	R/W	0	Read / write signal output	55	DCS IN	1	Compulink signal input
24	CLSW	T	"L" with tray closed	56	DCS OUT	0	Compulink signal output
25	OPSW	T	"L" with tray opened	57	11G	0	FL grid control output
26	RSW	T	"L" with pickup rest position	58	10G	0	FL grid control output
27	INH	1	Inhibit signal input port	59	9G	0	FL grid control output
28	CLOSE	10	"CLOSE" signal output	60	8G	0	FL grid control output
29	OPEN	0	"OPEN" signal output	61	7G	0	FL grid control output
30	TLOF	0	Turns off tracking servo	62	66	0	FL grid control output
31	GU	0	Increases tracking gain	63	SG	0	FL grid control output
32		1	Power supply voltage (+5V)	64	4G	0	FL grid control output

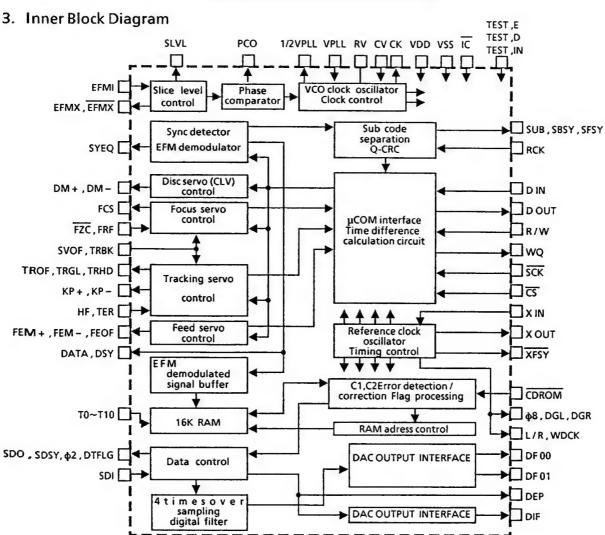
YM7121B(IC841)

1. Outline

YM7121 is a C-MOS LSI for signal processing and servo control (SVC) in a CD player. It is used for the demodulation of the EFM signal from the laser pick up , detection / correction of the error signal , signal processing in digital filtering , etc. and for various servo controls (focusing , disc , tracking and feed servos).

2. Top View





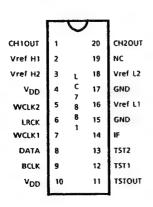
4. Terminal Function

Pin No.	Symbol	1/0	Function and Operation
1	cv		Adequate time constant is added to this terminal and input the PCO output. This makes the structure of clock reproduce circuit by inner VCO circuit.
2	RV	-	RV terminal is standard voltage terminal of inner VCO. And capacity for stabilizing is added to this terminal.
3 32 72	VDD	-	These are +5V power supply terminals.
4 5 70	TEST. IN TEST. E TEST. D		These terminals are for test. (Not used)
6	SYEQ	0	This is the check output terminal, it becomes high when flame synchronizing signal detected from EFM pattern coincides frame synchronizing signal from internal counter.
7	DSY	0	DSY is synchronizing signal which becomes high when first signal of data output comes in. This terminal is the check terminal. (Not used)
8	DATA	0	This terminal is for checks. The DATA is a serial signal of CK bit rate and it contains 8 bit EFM demodulation signal and 5 bit data control signal in 17 bit. (Not used)
9	CK	0	CK has 4.3218 MHz clock.
10~19	T0~T9	1	This terminal is internal RAM test terminal, and connected GND.
22	DEP	0	De-emphasis is necessary when this terminal is high.
23	DIF	0	DIF is digital audio interface format output matched EIAJ standards. (Not used)
24	SDO	0	SDO is a serial signal output of φ2 bit rate.(The MSB puts in at first.)
25	SDI	1	SDI is the input terminal of 4 times over sampling digital filter. It is usually connected with SDO.
26	SDSY	0	This terminal changes the Lch/Rch by LSB of the SDO. (Not used)
27	DTFLG	0	Not used.
28	ф2	0	φ2 is 2.1168 MHz crystal clock. (Not used)
29, 52, 77		 _	GND
30	XOUT	0	Not used.
31	XIN	1	Input from crystal clock.
33 34 35 36 37 38	XFSY SUB SBSY RCK SFSY CDROM	000-00	Not used.
39	Ф8	0	
40	WDCK L/R	0	Synchronizing signal Synchronizing signal
41	DGL	-	Not used.
43	DGR DF01	-	
45	DF00	0	Serial ssignal with $\Phi 8$ bit rate
46	<u>sck</u>	1	This terminal is connected to μCOM . It is an input terminal that carries the clock signal for data transfers.
47	R/W	1	This connects with microcomputer and it is an output terminal for switching data transmission mode. it enables to transmit data from SVC to microcomputer when R/M is "L" and from microcomputer to SVC when R/W is "H".
48	CS	1	This is a chip select terminal for YM7121.
49	DOUT	0	This terminal is the data output terminal connected to µCOM. When R/W is low, data is transferred from YM7121 to µCOM, according to the SCK clock input.

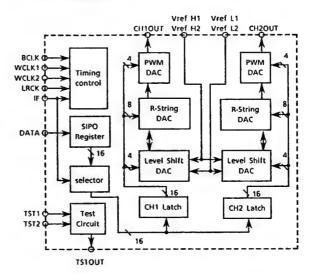
Pin No.	Symbol	1/0	Function and Operation
50	WQ	0	This terminal is connected to μCOM . It is a request signal which demands to μCOM inputting the data transfer (YM7121 to μCOM).
51	DIN	1	This is a data input terminal connected to μ COM. When R/W is high, the data is transferred from μ COM to YM7121 according to the SCK clock input.
53 54	DM+ DM-	0	These terminals output the PWM to control the speed of spindle motor. The speed of the motor goes up when DM+ is high, and slows down when DM- is high: both terminals can not become high simultaneously.
55 56 60 61 62 63 64	HF TER TRHD TRGL TROF KP- KP+	1 0 0 0 0	When tracks are being crossed during serches, the amplitude variation of the generated HF signal is sampled at the zero – cross point of the tracking error signal TER and the TROF signal is output. The level variations of this signal turn the servo on and off, greatly facilitaing track acquisition. KP + or KP – is output to conduct tracking, and TRHD is output during tracking to cause generation of the tracking error signal. The TRGL signal is for increasing the tracking gain after tracking is completed.
57 58 59	FEM+ FEM- FEOF	000	The FEM+ and FEM- are output as high speed feed signals, and FEOF signal is output for cutting the feed servo during high speed feed.
65	TRBK	1	TRBK is input to apply tracking brake from outside. TRGL becomes low with high input and inner control signal TBKE becomes high.
66	SVOF	1	When the signal inputs to SVOF, tracking and feed srvo set to OFF. TROF and FEOF become "H" with high input, and TRHD, KP+, KP- become low.
67 68 69	FZC FCS FRF	- 0 -	These terminals are used for controlling the focus servo. The FCS is for a leading signal of Focusing; the signal, generated when the focus point is achieved, terminate the focusing operation; and FCO flag is dropped internally by FRF signal generated when reflected light is detected.
71	īĊ	1	YM7121 needs initializing when power supply turn on. IC will be low more than 400μs since XIN is input clock with VDD standard.
73 74 75	SLVL EFMX EFMX	0 0 0	Amplitude limited, mutually anti-phased signals are output from EFMX and EMFX. Slice level is controlled by these signals and external amplifier. SLVL is output amplitude alteration component of both terminals. When integral circuit is connected to external. YM7121 easily can control slice level.
76	EFMI	ī	This terminal is input EFM signal. (1~ 2 Vpp)
78	PCO	0	This terminal outputs the phase difference when the polarity of the clock and the EFM pattern changes.
79	VPLL	1	This terminal is input D.C. voltage matched VCO free run frequency. (17.2872 MHz)
80	1/2 VPLL	0	This terminal outputs a half of VPLL input, and capacity for stabilizing is added to this terminal.

LC7881-C (IC873): D/A converter

1. Terminal Layout



2. Block Diagram



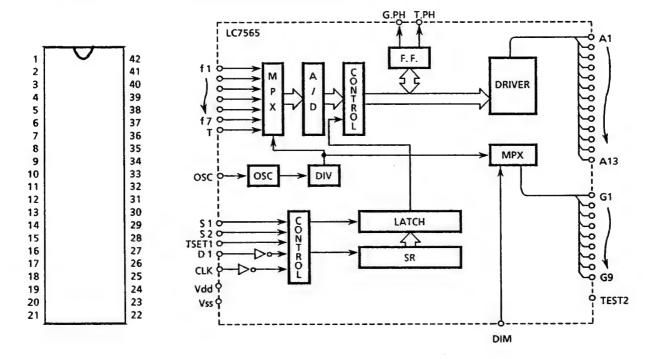
3. Pin Functions

Pin No Symbol I/O Channel 1 Output pin. 1 CH1 OUT O Channel 1 Output pin. 2 Vref H1 I Reference voltage "H" input pin1. 3 Vref H2 I Reference voltage "H" input pin2. (Non connect) 4 Vpp — Power supply, +5V. Word clock 2 input pin. 5 WCLK2 I When IF pin is at low level, this generates the internal signal used to latch the CH1 data of the digital audio signal, using the falling edge of WCLK2. I R clock input pin. This shows the CH1 and CH2 of the input digital audio data. When LRCK is at low level, it corresponds to CH1 data. When LRCK is at low level, it corresponds to CH2 data. Word clock 1 input pin. When IF pin is at high level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at high level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at high level, the data signal is input by each bit serially from the ISB. B DATA I WSB. When IF pin is at low level, the data signal is input by each bit serially from the LSB. B BCLK I Bit clock pin. This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter. Power supply, +5V. Test signal output pin. Normally connect to GND terminal. 1 TST OUT O Test signal output pin. Normally connect to GND terminal. 1 Test signal output pin. Normally connect to GND terminal. 1 Test signal input pin is at high level, the digital audio data is input from the MSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at high level, the digital audio data is input from the LSB f	J. [1111	unctions		
Vief H1 1 Reference voltage "H" input pin1.	Pin No	Symbol	1/0	Functions and Operations
Verified Reference voltage "H" input pin2. (Non connect)	1		0	
Vob Power supply, +5V.	2	Vref H1	1	
WCLK2 Word clock 2 input pin. When IF pin is at high level, WCLK2 pin should be set at low level. When IF pin is at high level, WCLK2 pin should be set at low level. When IF pin is at high level, this generates the internal signal used to latch the CH1 data of the digital audio signal, using the falling edge of WCLK2. I R clock input pin. This shows the CH1 and CH2 of the input digital audio data. When LRCK is at low level, it corresponds to CH1 data. When LRCK is at low level, it corresponds to CH2 data. Word clock 1 input pin. When LRCK is at low level, it corresponds to CH2 data. Word clock 1 input pin. When IF pin is at low level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at low level, it generates the internal signal used to latch the CH2 data. Digital audio data input pin. When IF pin is at high level, the data signal is input by each bit serially from the LSB. Bit clock pin. This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter. Power supply, +5V. TST OUT TST OUT TST OUT Test signal output pin. Normally leave this pin open. (Non connect) Test signal output pin. Normally leave this pin open. (Non connect) Test signal input pin is at high level, the digital audio data is input from the MSB first. When IF pin is at high level, the digital audio data is input from the LSB first. When IF pin is at low level, the digital audio data is input from the LSB first. TST GND Ground. Reference voltage "L" input pin1. Reference voltage "L" input pin2.	3	Vref H2	1	Reference voltage "H" input pin2. (Non connect)
WCLK2	4	V _{DD}	-	Power supply, +5V.
Care Care	5	WCLK2	-	When IF pin is at high level, WCLK2 pin should be set at low level. When IF pin is at low level, this generates the internal signal used to latch the CH1
WCLK1 When IF pin is at high level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at low level, it generates the internal signal used to latch the CH2 data. Digital audio data input pin. When IF pin is at high level, the data signal is input by each bit serially from the MSB. When IF pin is at low level, the data signal is input by each bit serially from the LSB. BIT clock pin. This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter. Power supply, +5V. TST OUT TST OUT Test signal output pin. Normally connect to GND terminal. TST2 Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. SOND Foround. Reference voltage "L" input pin1. Reference voltage "L" input pin2. NO connection.	6	LRCK	-	This shows the CH1 and CH2 of the input digital audio data. When LRCK is at high level, it corresponds to CH1 data.
BOATA When IF pin is at high level, the data signal is input by each bit serially from the MSB. When IF pin is at low level, the data signal is input by each bit serially from the LSB. Bit clock pin. This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter. Vod Power supply, +5V. TST OUT TST OUT TST1 TST2 Test signal output pin. Normally leave this pin open. (Non connect) Test signal input pin. Normally connect to GND terminal. If Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. TST0 TST0 Test signal input pin. Normally connect to GND terminal. TST1 TEST Signal input pin Normally connect to GND terminal. TST2 Reference voltage "L" input pin1. TST0 TST1 TST1 TEST Signal input pin is at high level, the digital audio data is input from the MSB first. TST2 TST3 TST3 TEST Signal input pin is at high level, the digital audio data is input from the LSB first. TST3 TST3 TST3 TST3 TST3 TST3 TST3 TST	7	WCLK1	1	When IF pin is at high level, this pin generates the internal signal used to latch both the CH1 and CH2 data, using the falling edge of WCLK1. When IF pin is at low level, it generates the internal signal used to latch the CH2
9 BCLK I This clock signal is used when reading the digital audio data by each bit serially, and also used for PWM D/A converter. 10 V _{DD} Power supply, +5V. 11 TST OUT O Test signal output pin. Normally leave this pin open. (Non connect) 12 TST1 Test signal input pin. Normally connect to GND terminal. 13 TST2 14 IF I Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. 15 GND — Ground. 16 Vref L1 I Reference voltage "L" input pin1. 17 GND — Ground. 18 Vref L2 I Reference voltage "L" input pin2. 19 NC — No connection.	8	DATA	1	When IF pin is at high level, the data signal is input by each bit serially from the MSB. When IF pin is at low level, the data signal is input by each bit serially from the
11 TST OUT O Test signal output pin. Normally leave this pin open. (Non connect) 12 TST1	9	BCLK	1	This clock signal is used when reading the digital audio data by each bit serially,
TST OUT O Test signal output pin. Normally leave this pin open. (Non connect) TST1 TST2 Test signal input pin. Normally connect to GND terminal. Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. GND — Ground. Reference voltage "L" input pin1. Reference voltage "L" input pin2. No connection.	10	V _{DD}		Power supply, +5V.
13 TST2 14 IF 1 Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. 15 GND — Ground. 16 Vref L1 Reference voltage "L" input pin1. 17 GND — Ground. 18 Vref L2 Reference voltage "L" input pin2. 19 NC — No connection.	11		0	
13 TST2 14 IF 1 Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. 15 GND — Ground. 16 Vref L1 Reference voltage "L" input pin1. 17 GND — Ground. 18 Vref L2 Reference voltage "L" input pin2. 19 NC — No connection.	12	TST1		Test signal input pin. Normally connect to GND terminal.
Interface select pin. When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first. Solution Ground. Reference voltage "L" input pin1. Reference voltage "L" input pin2. Reference voltage "L" input pin2. No connection.	13	TST2	Ι'	
16 Vref L1 Reference voltage "L" input pin1. 17 GND - Ground. 18 Vref L2 Reference voltage "L" input pin2. 19 NC - No connection.		IF	1	When IF pin is at high level, the digital audio data is input from the MSB first. When IF pin is at low level, the digital audio data is input from the LSB first.
17 GND - Ground. 18 Vref L2 Reference voltage "L" input pin2. 19 NC - No connection.	15	GND	_	
18 Vref L2 Reference voltage "L" input pin2. 19 NC — No connection.	16	Vref L1	1	
19 NC – No connection.	17	GND	_	
	18	Vref L2	1	
Total City of	19	NC	-	No connection.
20 CH2 OUT O Channel 2 output pin.	20	CH2 OUT	0	Channel 2 output pin.

■ LC7565 (IC901) : SEA FL Driver

1. Top view

2. Internal Block Diagram

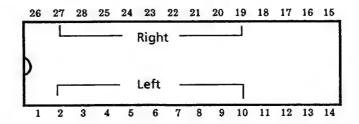


3.Function

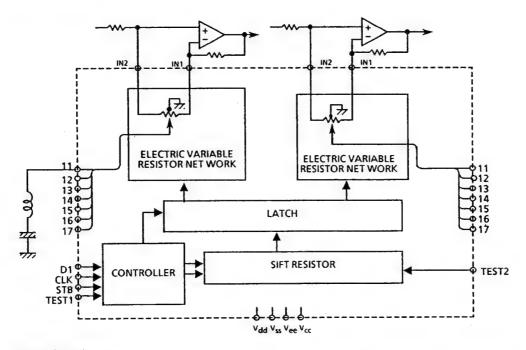
Pin No.	Symbol	Descriptions
42	VDD	Power supply (+5V)
19	VSS	GND
17	DI	Data input terminal f rom CPU
18	CLK	Clock input terminal from CPU
15	51	Chip select terminal (Connected to GND)
16	52	Chip select terminal (Connected to GND)
21	G.PH	Peak hold for graphic equalizer display; Decision of reset time with connecting resistor and capacitor
22	T.PH	Peak hold of total display; Decision of reset time with connecting resistor and capacitor
32	DIM	Connected to GND
24	Т	Input terminal of rectified voltage signal
25~31	f1~f7	
20	osc	Oscillator with connecting resistor and capacitor
2~14	A1~A13	FL anode drive output
33~41	G1~G9	FL grid drive output
23	TEST1	Connected to GND
1	TEST2	Connected to GND

LC7522 (IC 651): Variable Resistor for SEA Control

(1) Top view



(2) Block Diagram



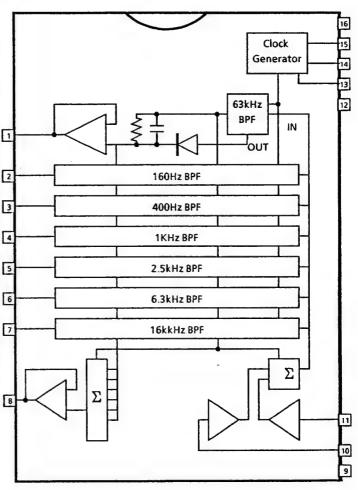
(3) Pin functions

Pin No.	Pin Name	Functions
1	VDD	Power supply + 7V for audio signal
18	vss	Connect to Ground .
14	VEE	Power supply -7V for audio signal. Connect to VSS when using single-power.
15	vcc	Power supply +5V
2,27	IN 1	Audio signal input
3,26	IN 2	The inversion signal of the operational amplifier inputs to IN 1 normally.
		The non-inversion signal of the operational amplifier inputs to IN 2 normally.
16	DI	Data input from the CPU. Schmitt inverter type
17	CLK	Clock signal input from the CPU. Schmitt inverter type
4~10	f1~f7	For connect to band-pass filter. f1~f7 x 2 (Left and Right)
19~25		
11	TEST 1	Not use
12	TEST 2	Not use
13	S	Connect to VEE
28	NC	Not use

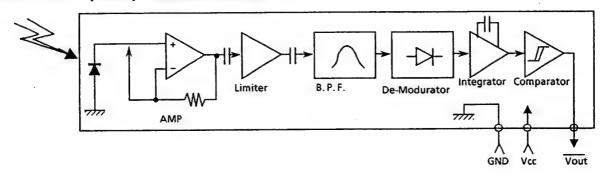
Internal Block Diagram of Other ICs

■ XR1091CCP(IC903): Display Filter

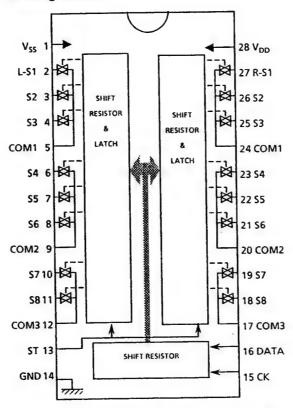
in o.	Symbol	Descriptions	
1	63	Peak hold output of 63Hz band-pass filter	
2	160	Peak hold output of 160Hz band-pass filter	
3	400	Peak hold output of 400Hz band-pass filter	
4	1k	Peak hold output of 1kHz band-pass filter] _
5	2k	Peak hold output of 2kHz band-pass filter	1 L
6	6k	Peak hold output of 6kHz band-pass filter] _
7	16k	Peak hold output of 16Hz band-pass filter	
8	TOTAL	Total frequency output (peak hold)	
9	Vss	Power supply (- 6V)] _
10	RIN	Right channel input	
11	L IN	Left channel input : Connecting to ground	
12	GND	Ground terminal],
13	CLK	Connecting capacitor for clock	
14	CLK	Connecting resistor to pin 13 for clock	1
15	CLK / 2	1/2 clock output	1
16	Vdd	Power supply (+ 6V)	1



■GP1U501X (IC902): Remocon Module IC

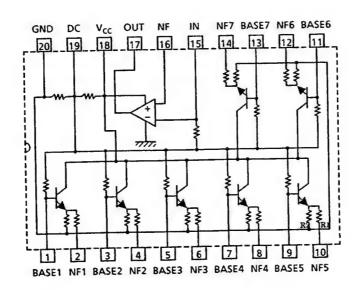


■TC9163N (IC590): Analog switch

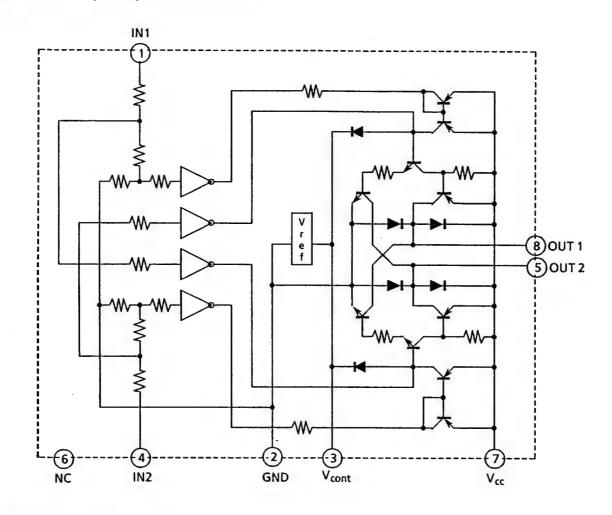


	T	Swit	ch Sele	ct bit					Right	Left		Chip Se	elect bit	
	S1	\$2	53	\$4	\$5	\$6	\$7	58	\$9	\$10	\$11	\$12	S13	\$14
TC9163N	The sv	vitch is	on wh	ere the		1	0	0	0					

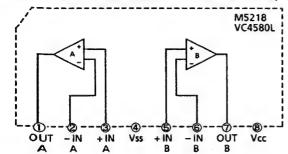
LA3607S (IC653, IC654): 7-element Electrical Inductor



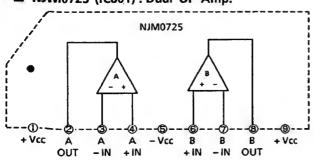
■LB1639-CV (IC633): Motor Driver



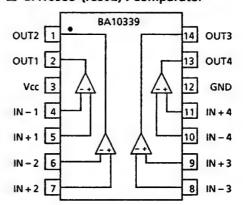
VC4580L (IC 762): Dual OP Amp. BA15218 (IC781,803,871,872): Dual OP Amp.



■ NJM072S (IC801): Dual OP Amp.



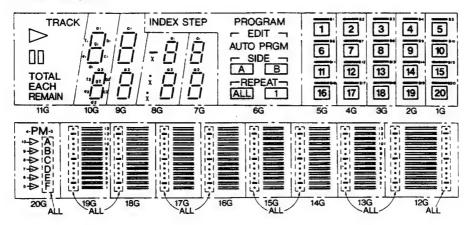
BA10339 (IC802): Comparator



Internal Connections for the FL Display Tube

FL901: ELU0001-093

(1) Grid Layout



(2) Pin Connections

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CONNECTION	F	F	N	19	18	17	16	15	14	13	12	20	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	11	10	9
COMMECTION	1	1	P	G	G	G	G	G	G	G	G	G	ALL	1	2	3	4	5	6	7	8	9	10	11	12	13	X.	G	G	G
PIN NO.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55					
CONNECTION	8	7	6	5	4	3	2	1	P	P	P	P	P	P				P	P g2	P	P	P	N	F	F					

Note F: Filament P: Anode G: Grid NP: No Pin

(3) Anode Connection Table

	11G	10 G	9 G	8 G	7 G	6 G	5G	4 G	3 G	2 G	1 G
a 1	_	al	a l	al	a 1	_	_	_	_	_	_
b1	_	b1	b1	b1	b1	_	_	_	-	_	_
c 1		c 1	c 1	c 1	c 1	PROGRAM	1	2	3	4	5
d 1	TOTAL	d1	d 1	d 1	d 1	AUTO	[] (6)	[] (7)	[] (8)	(9)	[] (10)
e 1	-	e 1	e l	e l	e 1	EDIT-	B 6	В7	B 8	B 9	B 10
f 1	TRACK	f 1	f 1	f 1	f 1	INDEX	В1	B 2	B 3	B 4	B 5
gl		g l	g l	g l	g 1	STEP	m	(2)	[] (3)	(4)	(5)
a 2	EACH	a 2	a 2	a 2	a 2	PRGM	6	7	8	9	10
b2	REMAIN	b2	b2	b2	b 2	SIDE	B 11	B 12	B 13	B 14	B 15
c 2	_	c 2	c 2	c 2	c 2	REPEAT—	B 16	B 17	B 18	B 19	B 20
d 2	_	d2	d2	d2	d2	1	16	17	18	19	20
e 2	-	e 2	e 2	e 2	e 2	ALL	[](16)	[](17)	[](18)	[_](19)	(20)
f 2	_	f 2	f 2	f 2	f 2	A	[](11)	[] (12)	[] (13)	(14)	[] (15)
g 2	_	g 2	g 2	g 2	g 2	В	11	12	13	14	15
х	_			:,-	_	_	_	_	_	_	_

Disassembly Procedures

Notice

When comfirm the AX-MX1BK/LBK, connect DR-MX1BK/LBK because the power can not be turned on.

If comfirm using only the AX-MX1BK/LBK, short circuit P601(ENH-151-1).

(1) Removing the top cover

- 1. Remove 2 screws on each side and 2 screws on the rear.
- 2. Pull the top cover slightly backward and lift it while spreading the backs of the left and right sides to remove it.

(2) Removing the tray Ass'y

- 1. Remove the top cover.
- Turn the power on and press OPEN/ CLOSE button to move the tray out. Then turn the power off.
- 3. While pressing the tray stopper, pull the tray toward front to move out it.
- 4. If the power can not be turned on due to malfunction, etc., turn the plastic screw located on the bottom plate under the front panel in the direction of the arrow (clockwise) to move the tray out, as shown in the Fig.2.

(3) Removing the CD Chassis base

- 1. Remove the top cover. .
- 2. Remove the tray Ass'y.
- Remove voltage selector A,B and the backup transformer P.C. board. (Handle the Backup transformer P. C. Board with care.)
- 4. Remove the connector J713, J711 and J701.
- 5. Remove 4 screws ① (Fig. 1)
- Take the CD chassis base out with mechanism Ass'y and CD P.C. board.

(4) Confirming the System control and power amplifire P.C. board

- Remove the CD chassis base with the mechanism Ass'y and the CD P.C. board.
- 2. Remove 4 screws fastening the system control and power amplifire P.C.board.
- 3. Remove 4 screws ② fastening the rear side.(Fig.3)
- 4. Confirm the CD P.C. board as shown in the Fig.4

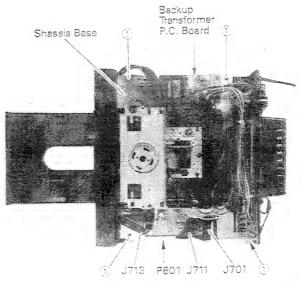


Fig. 1

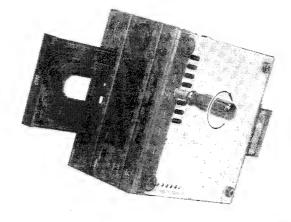


Fig. 2

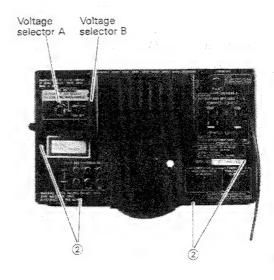


Fig. 3

(5) Confirming the CD P.C. board

- 1. Remove the CD chassis base with the mechanism Ass'y and the CD P.C. board.
- 2. Remove the CD P.C. board with the insulation sheet from CD chassis base.
- 3. Confirm the P.C. board as shown in the Fig.5.

(6) Removing the Front panel

- 1. Remove the top cover.
- 2. Remove the tray Ass'y.
- 3. Remove the CD chassis base.
- 4. Remove 4 screws under the front panel.
- 5. Remove 3 volume knobes.
- 6. Remove a nut fastening the main volume.
- 7. Cut the tie band.
- 8. Remove 2 screws fastening the balance / twin bass P.C. board on the front panel and take it out.
- 9. Take the set apart as shown in the Fig. 6.

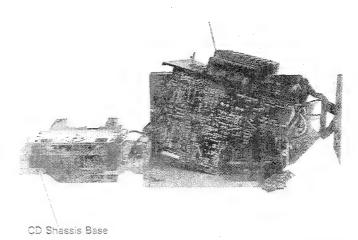
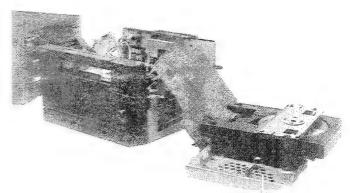
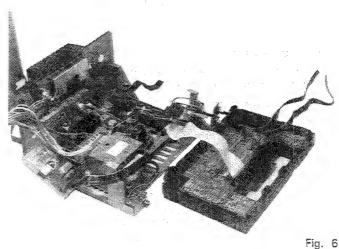


Fig. 4



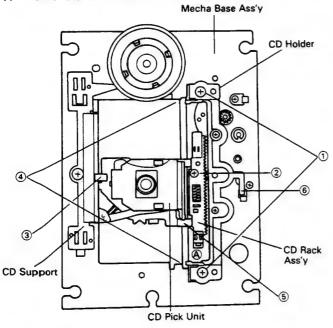
CD Shassis Base

Fig. 5



(7) Laser pickup removal

- Remove the top cover, tray assembly, cover and the clamper.
- Move the Pickup Unit from rest position to the center pushing (5) point with finger.
- 3. Remove the screw 2 from the CD RACK Ass'y.
- 4. Remove the CD RACK Ass'y.
- 5. Remove the screw 1 from the mecha base Ass'y.
- 6. Remove the CD HOLDER fastening the shaft from the mechabase Ass'y. (Release the hook ⑥)
- 7. Remove the CD PICK UNIT with the shaft.

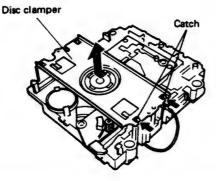


(8) Laser pickup installation

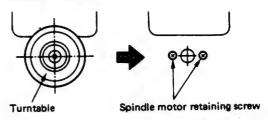
- Connect two wires with the connectors of APC P.C. Board.
- 2. While installing the ③ in the CD SUPPORT, set the shaft on the base crook ④.
- 3. Install the CD HOLDER.
- 4. Install the CD RACK Ass'y in CD PICK UNIT.
 - 1) Install like inserting (A) at first.
 - 2) Fix screw 2.

(9) Removing the spindle motor

 Remove a cover and release the catches holding the disc clamper to remove the disc clamper.



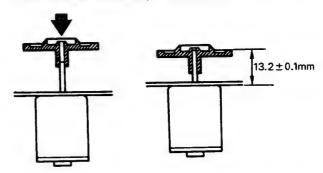
2. Remove the turntable, and remove the two screws retaining the spindle motor.



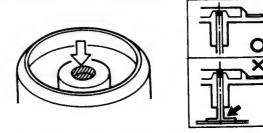
- 3. Remove the mechanism assembly as described above.
- Remove the screw retaining the Spindle and Feed Motor P.C. Board and unsolder it.

(10) Spindle motor installation

- 1. Tighten the 2 screws to the same torque.
- 2. Solder the Spindle and Feed Motor P.C. Board.
- Install the turntable. When installing, press straight down at the center of the turntable until the distance from the bottom of the mechanism base to the top of the turntable is exactly 13.2 ± 0.1mm.

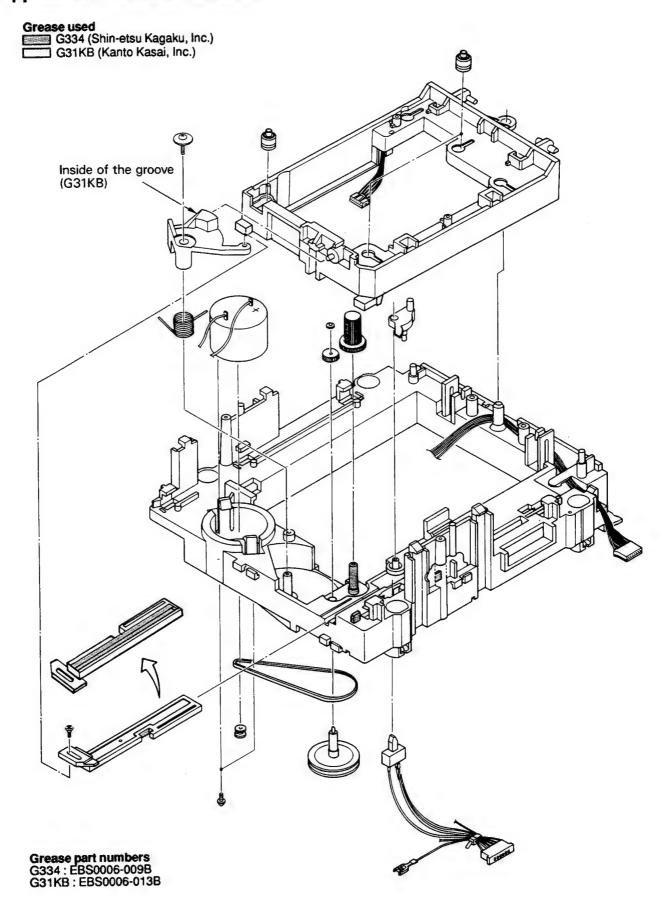


After insertion is complete, bond the motor shaft and turntable together (at the section marked by an arrow in the figure on the left below).



Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an arrow in the figure on the right).

Application Points for Grease

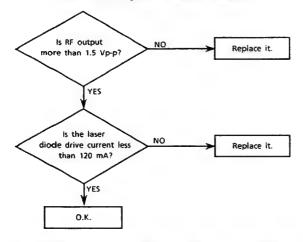


Maintenance of Laser Pickup

(1) Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

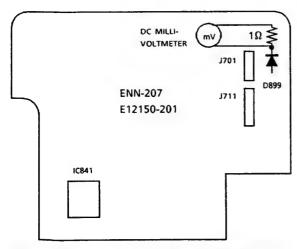
- The level of RF output (EFM output: amplitude of eye pattern) will be low.
- The drive current required by the laser diode will be increased. In such a case, check the life of the laser diode following the flowchart below



(2) Measurement of laser diode drive current

Insert a resistor (1 Ω) in series to D899.

Measure the voltage across the resistor with a milli-voltmeter. When the voltage is more than 180 mV, it shows that the life of the laser diode has expired



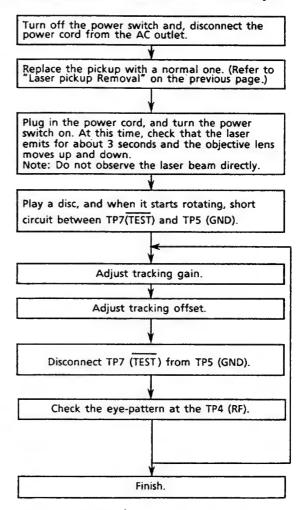
(3) Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pick up is functioning normally, the laser pickup may be damaged due to excessive current.

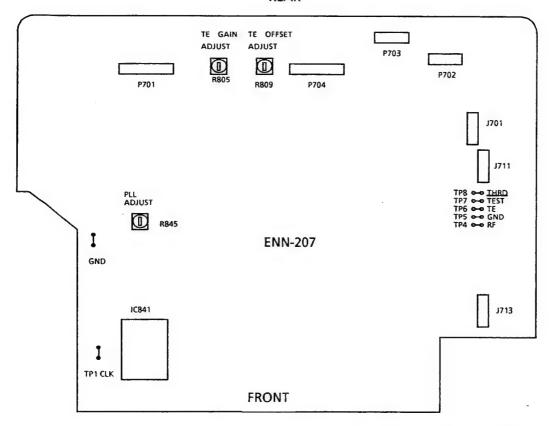
Replacement of Laser Pickup



Note: Since one adjustment may affect other settings, repeat these adjustments a few times.

Adjusting Procedures

REAR



(1) PLL free-running adjustment

- a. Measuring instrument Frequency counter
- b. Adjusting procedure
 - 1. Set the player to stop mode.
 - 2. Connect a frequency counter with TP1 (CK) and GND on the main PC board.
 - 3. Adjust R845 for setting the counter's value
 - becomes 4.310 ± 0.002MHz.
 - 4. Perform this adjustment immediately after the power is turned on.

(2) Tracking gain adjustment

- a. Measuring instruments
 - Oscilloscope, Normal disc
- b. Adjusting procedure
 - 1. Connect an oscilloscope with TP6 (TE) and TP5 (GND) on the main PC board.

 - Play the disc.
 Short circuit TP7 (TEST) to GND.
 - Adjust R805 for setting tracking error signal becomes 2.0 V_{P-P}.

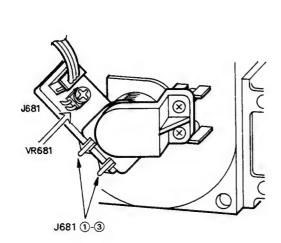
(3) Tracking offset adjustment

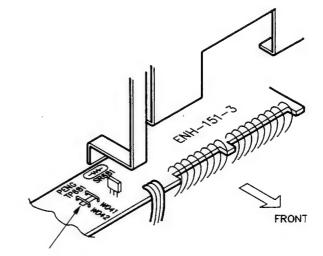
- a. Measuring instruments Oscilloscope, Normal disc
- b. Adjusting procedure
 - 1. Connect an oscilloscope with TP6 (TE) and GND on the main PC board.
 - 2. Play the disc.
 - 3. Short circuit TP7 (TEST) to GND.
 - 4. Adjust R809 for setting the DC level of the tracking error (off set) becomes 0.

Note: Adjust R809 for setting the waveform

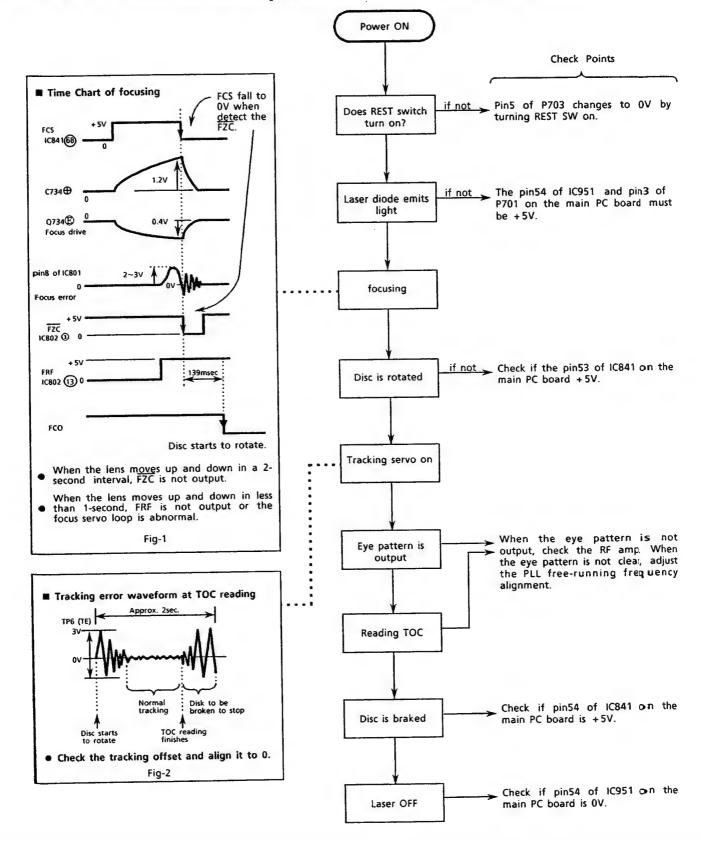
Adjusting Procedures(Power Engine)

- 1. Short circuit W041 to W042. (The Power Engine operates with about 16Hz frequency.)
- 2. Connect an osciloscope with pin 1 and pin 3 of J681.
- 3. Adjust VR681 to obtain 7 ± 0.5 V on the digital-multimeter.(19.8 \pm 1.4Vp-p on the oscilloscope)



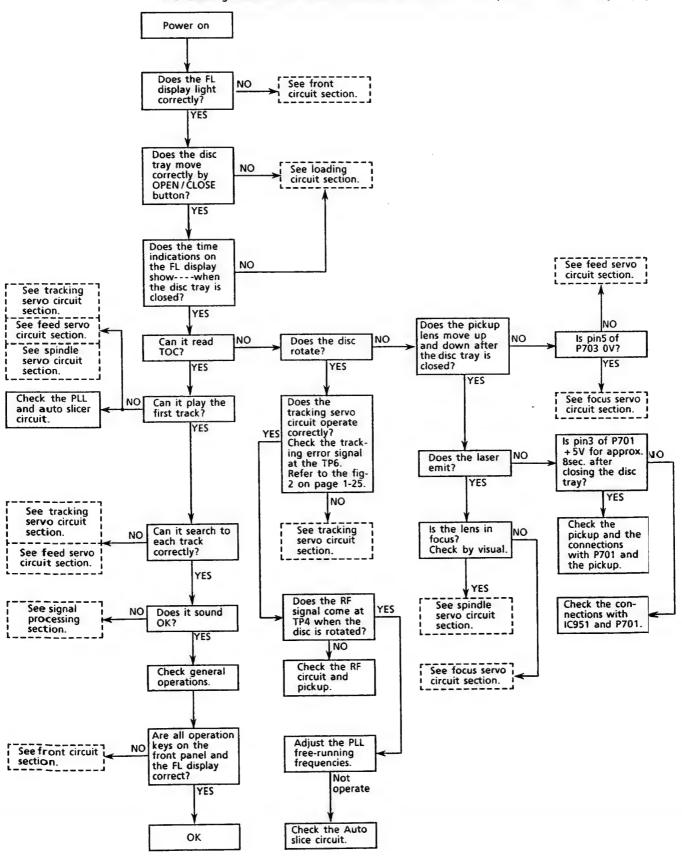


Flow of Functional Operation Until TOC is Read

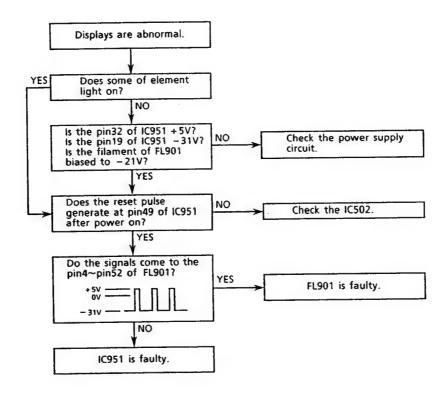


Troubleshooting

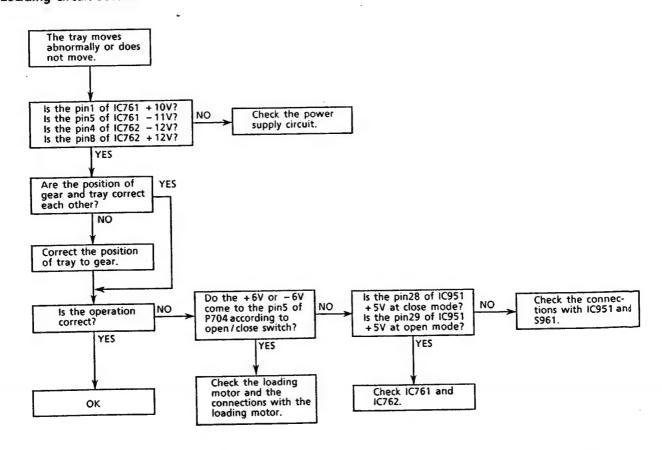
The following flowchart shows each circuit's condition about from "power on" until "ready to play".



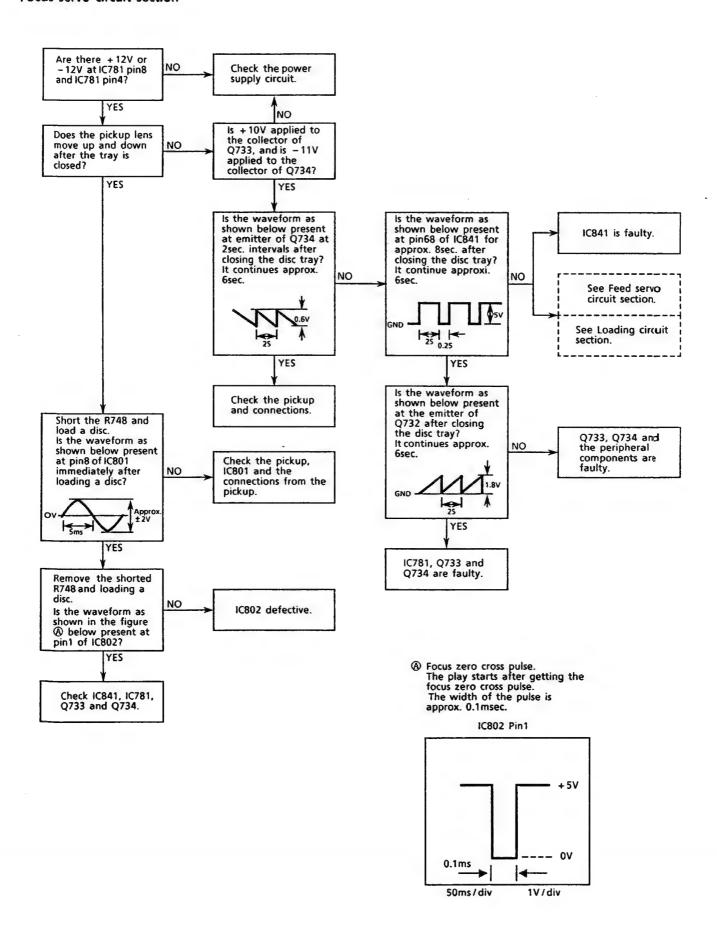
Front circuit Section



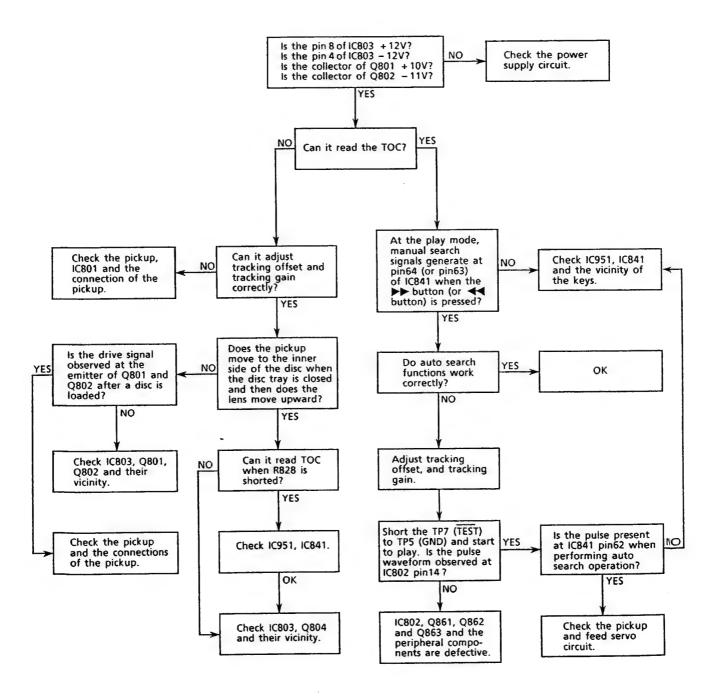
Loading circuit section



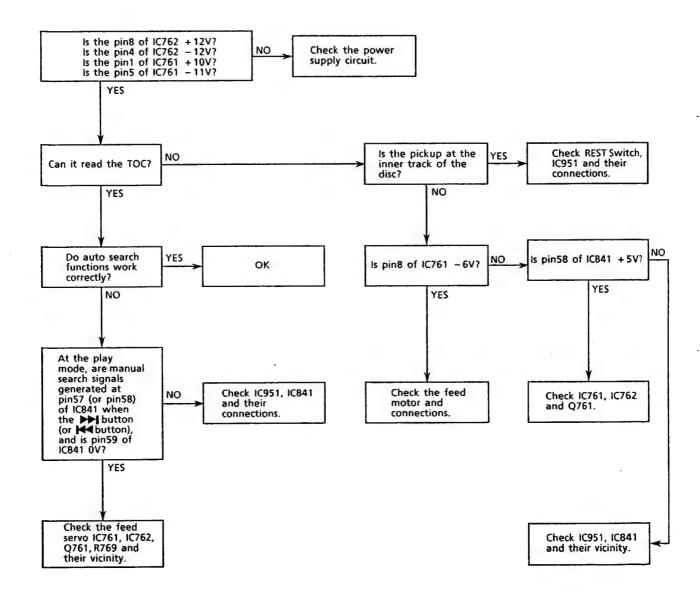
Focus servo circuit section



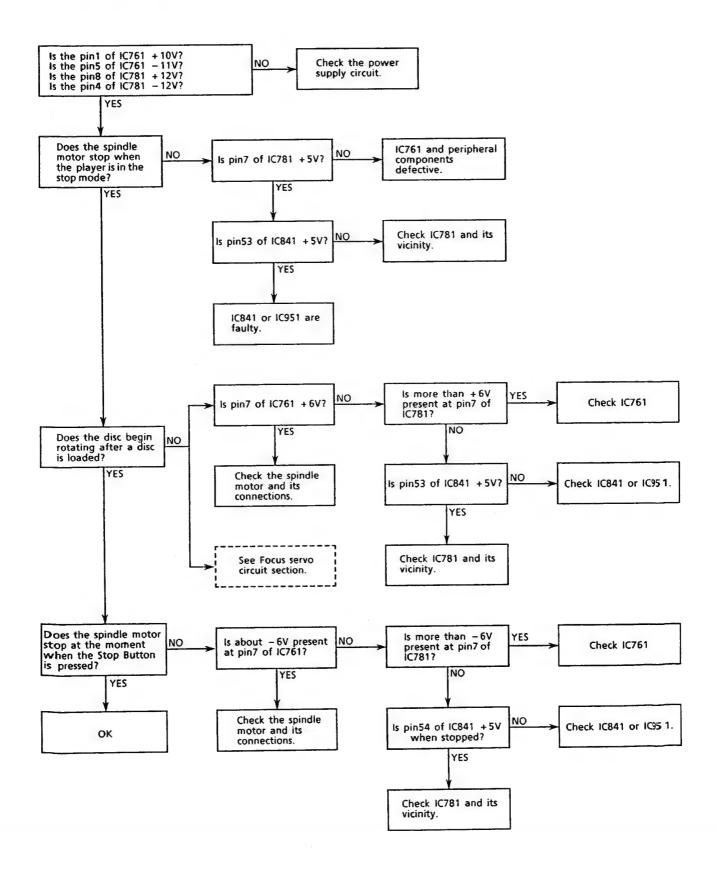
Tracking servo circuit section



Feed servo circuit section



Spindle servo circuit section

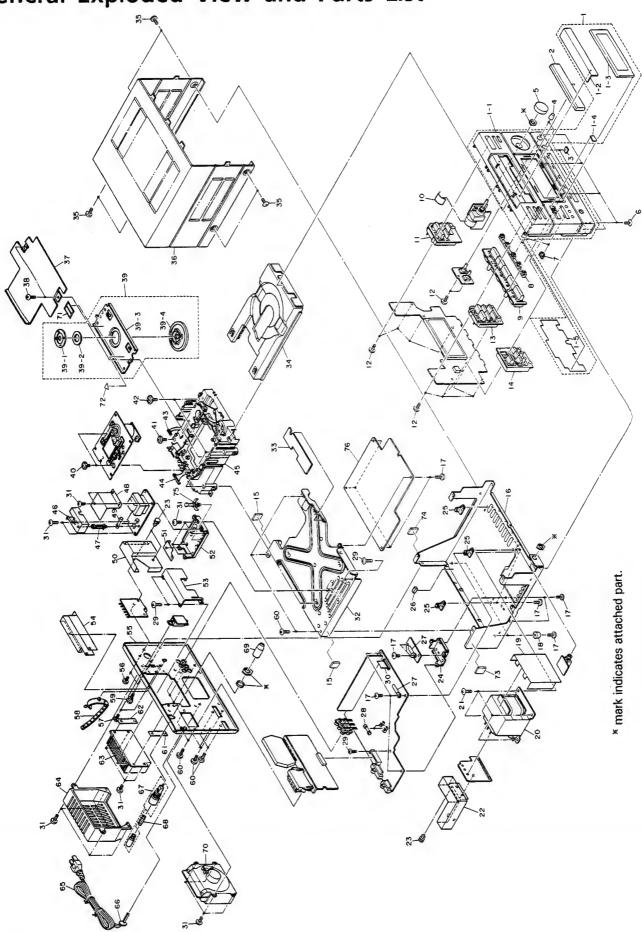


PARTS LIST

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■ ENH-151 ☐ Main Amplifier PC Board Ass'y	2- 7
■ ENF-049 □ SEA Module PC Board Ass'y	2-11
■ ENN-207 □ CD PC Board Ass'y	2-12
■ ENB-096 ☐ Front PC Board Ass'y	2-15

General Exploded View and Parts List



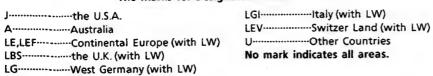
Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1 1-1 1-2	EFP-AXMX1BKU (S) EFP-AXMX1LBKE (S) E12164-006 E306550-004 E306550-005	Front Panel Ass'y Front Panel Ass'y Front Panel Ornament Ornament	1 1 1 1		J,A,U Except J,A,U J,A,U Except J,A,U
	1-3 1-4 1-5 2 3	E306552-003 E75738-002 E75959-001 E306560-001 E75896-001	Window Screen Remote Plate FL Screen Fitting Spacer	1 1 1 1 2		
	4 5 6 7 8	E75737-001 E306549-001 SDSG3008M E75754-001 E306580-001	Knob Volume Knob Screw Indicator Indicator	2 1 4 2		
	9 10 11 12 13	E306558-004 EXO025025R05\$13 E306556-001 SDSF2608Z E306554-001	Push Button Felt Spacer Push Button Screw Push Button	1 1 1 11	FUNCTION CD PLAY CD EDIT	
	14 15 16 17 18	E306562-001 EXO020010R10S13 E12175-002 SBSG3008N E47227-029	Power Button Spacer Chassis Base Screw Foot	1 2 1 16 2	POWER	
	19 20	E306903-001 ETP1050-21JA ETP1050-21FA ETP1050-21EA ETP1050-21EABS	Protect Sheet Power Transformer Power Transformer Power Transformer Power Transformer	1 1 1 1 1	T002 T002 T002 T002 T002	J U A,LE,LEF,LEV LBS
\triangle	21 22 23	ETP1050-21XA E65389-004 E306775-001 E48729-008 E48729-008	Power Transformer Special Screw Protect Cover Plastic Rivet Plastic Rivet	1 4 1 1 3	Т002	Except U
\triangle	24 25 26 27 28	E306804-001 E68587-004 E3400-442 E72018-001 QMF51U1-1R6S	Circuit Board Bracket Circuit Board Bracket Felt Spacer Wire Clamp Fuse	1 3 1 2 2	F501 , F502	ı
<u>*</u>	29 30 31	QMF51A2-1R25S QMF51E2-1R25SBS GBSG3008CC EWR1UE-25PP SBSG3008M	Fuse Fuse Screw Flat Wire Screw	2 2 4 1 20	F501 , F502 F501 , F502	Except J, LBS LBS
-	32 33 34 35 36	E12176-004 E75900-001 E12048-005 E75440-001 E26586-007	Chassis Base Spacer Tray Special Screw Metal Cover	1 1 1 6		
	37 38 39 39-1 39-2	E306722-002 SBSF3008M E305598-009 E74898-003 E74897-002	Cover Screw Clamper Base Ass'y Yoke Magnet	1 2 1 1		
	39-3 39-4 40 41 42	E305594-002 E305595-004 E74948-001 E74727-006 E73265-003	Clamper Base Clamper Special Screw Special Screw Special Screw	1 1 2 1 3		
	43 44 45 46 47	EWS254-B218 EWS25A-B104 E306774-002 E302321-001	Socket Wire Ass'y Socket Wire Ass'y CD Mechanism Unit Ass'y Protect Cover Fastener	1 1 1 1	4P 10P See page 2-5	Except J Except J

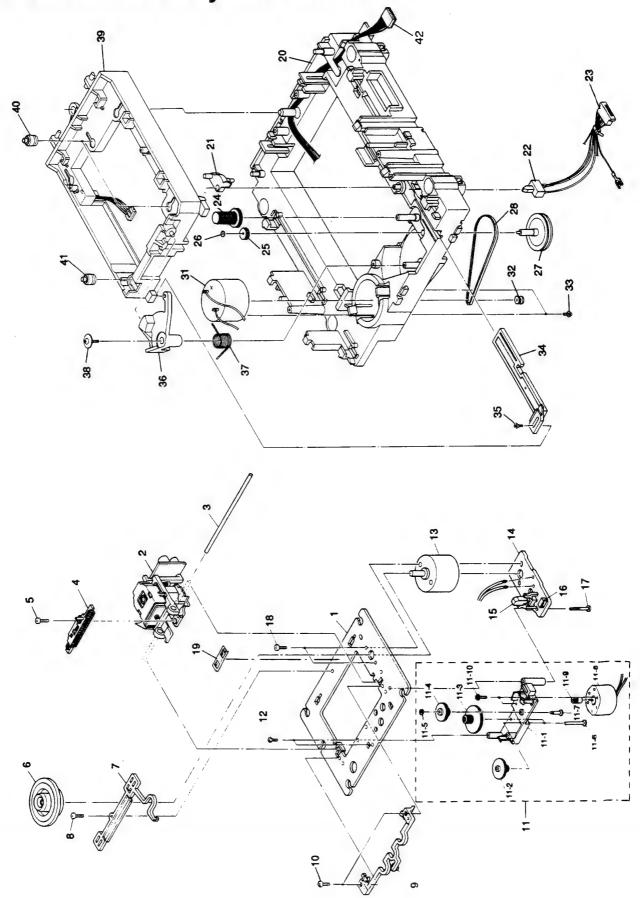
A	Item	Part Number	Part Name	Q'ty	Description	Areas
*	48 49 50	E75983-001 QMF51U1-4R0S QMF51A2-1R6S QMF51E2-1R6SBS E306776-001	Protect Cover Fuse Fuse Fuse Protect Cover	1 1 1 1	F001 F001 F001	J J Except J, LBS LBS U
	51 52 53 54 55	E406066-001 E306772-001 E306721-001 E75994-002 E26590-004	Protect Sheet Circuit Board Bracket Leaf Spring Protect Cover Rear Panel	1 1 1 1		Except J
		E26590-005 E26590-006 E26590-007 E26590-008 E26590-009	Rear Panel Rear Panel Rear Panel Rear Panel Rear Panel	1 1 1 1		U A LE,LEF LG,LGI,LEV LBS
	 56 57 58	E306818-001 E67199-001 S8ST3006M SBSF2508M E304880-001	Rating Label Caution Label Screw Screw Cord Holder	1 1 2 2		ח ח ז
	59 60 61 62	E73562-003 E73273-006 E73273-006 E406067-001 E406067-002	Special Screw Special Screw Special Screw Spacer Spacer	1 11 12 1		U Except U Except J Except J
A	63 64 65	E306563-002 E26595-003 QMP1D00-200H QMP2560-244 QMP3900-200	Heat Sink Rear Cover Power Cord Power Cord Power Cord	1 1 1 1		J A Except J,A,U,LBS
	66 67	QMP7520-200 QMP9017-008BS QHS3876-162 QHS3876-162BS QMG0301-003	Power Cord Power Cord Cord Stopper Cord Stopper Fuse Holder	1 1 1 1		U LBS Except LBS LBS U
A	68 69 70 71 72	QMF51A2-1R6S E69291-001 E26596-005 E303875-004 E71541-001	Fuse Fuse Cover Ventilator Caution Label Eilaser Mark	1 1 1 1	F001	U U LE,LEF
	73 74 75 76	EXO030020R35S13 EXO020010R35S13 E406084-001 E306855-001 E61029-005	Spacer Spacer Fastener Shield Cover Number Label	1 1 1 1		Except J
	-	E70891-001 E76016-001 QZL1001-001 E70028-001 QZL1031-101	Class 1 Label Caution Label UL Lable Approval Label SEV Label	1 1 1 1 1 1 1 1		Except J J LE LEV
	_	E60965-001BS E74792-065	Warning Label F. Mark Label	1 1		LBS LG

The Marks for Designated Areas

⚠ Safety Parts



CD Mechanism Ass'y and Parts List



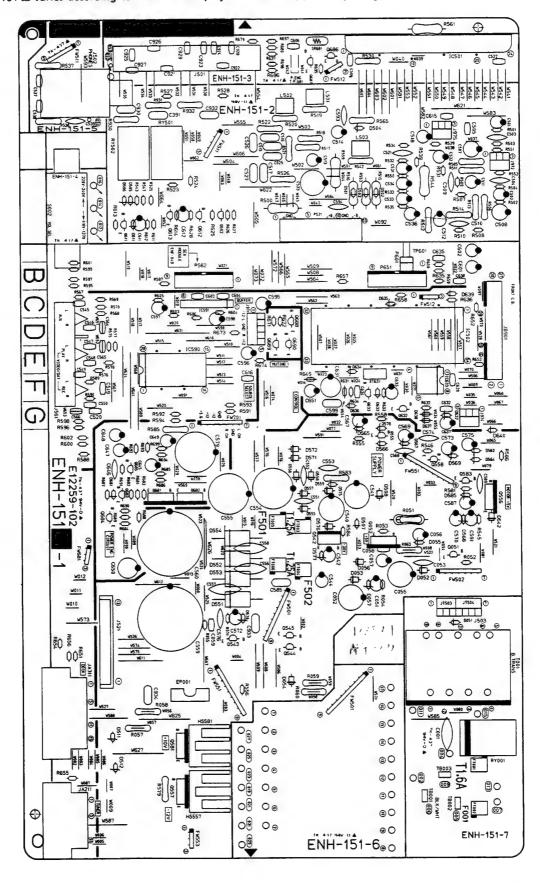
Parts List

Item	Part Number	Part Name	Q'ty	Description	Areas
1 2 3 4 5	E26487-002 OPTIMA-55 E74930-002 E306282-001 SPSH2050M	Mechanism Base Pick up Ass'y Shaft Rack Ass'y Screw	1 1 1 1		
6 7 8 9	E75807-101 E306275-002 SDST2005Z E306277-001 SDST2004Z	Turn Table Ass'y Support Screw Holder Screw	1 1 1 1 2		
11 11-1 11-2 11-3 11-4	SE10351-11 E306276-001 E75444-001 E75443-001 E75445-001	Gear Ass'y Gear Base Gear Gear Gear	1 1 1 1 1		
11-5 11-6 11-7 11-8 11-9	WDM163550 E75494-002 E75494-003 HKN-3A6RDNV E75493-001	Slit Washer Shaft Shaft Feed Motor Pinion Gear	1 1 2 1		
11-10 12 13 14 15	NPSH1735Z E72713-001 E74539-001B E12114-005 MSW1731CVCA	Screw Special Screw Spindle Motor Circuit Board Leaf Switch	2 2 1 1 1	ENN-187A 5001	
16 17 18 19 20	EMV5109-006B E75832-001 SDSP2003N E75827-001 E12049-002	6P Plug Ass'y Special Screw Screw Spring Loading Base	1 1 2 1 1	P011	
21 22 23 24 25	E74888-003 ESS2100-003 EWS246-007 E74887-002 E74886-003	Lock Lever Slide Switch Socket Wire Ass'y Loading Gear Gear	1 1 1 1		
26 27 28 31 32	E72024-001 E74885-004 E74347-004 RF-500TB-12560 E75054-001	Speed Nut Pulley Belt Loading Motor Motor Pulley	1 1 1 1		
33 34 35 36 37	SPSK2640Z E305596-003 E73035-003 E305597-005 E74889-002	Screw Rack Special Screw Elevator Spring	2 1 1 1 1		
38 39 40 41 42	E65923-003 E26521-002 E75609-001 E75609-002 EW5256-B236	Screw Elevator Base Ass'y Insulator Insulator Socket Wire Ass'y	1 1 2 1 1		

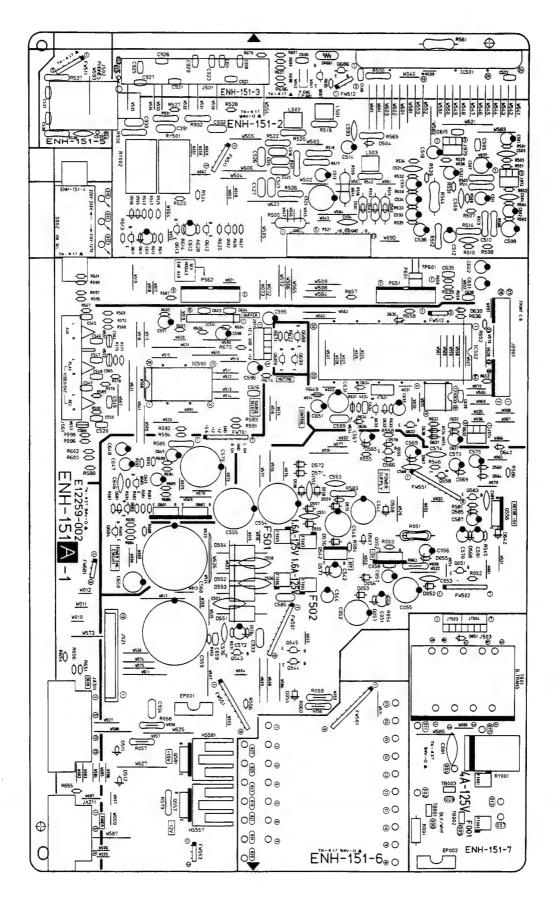
Printed Circuit Board Ass'y and Parts List

■ENH-151 ☐ Main Amplifier PC Board Ass'y (Except J)

Note: ENH-151 □ varies according to the areas employed. See note (1) when placing an order.



■ENH-151 A Main Amplifier PC Board Ass'y (J Only)



Note (1)

PC Board Ass'y	Designated Areas
ENH-151 A	the U.S.A.
ENH-151 B	Other Countries
ENH-151 C	Continental Europe (with LW) Switzerland (with LW)
ENH-151 D BS	the U.K. (with LW)
ENH-151 E	West Germany (with LW) Italy (with LW)
ENH-151 F	Australia

Transistors

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	80	52	1	251	D:	20	6	1 (Έ	,	F 2)		SI	Ļ	10	01	ı			RO	Н	М						1			
	Q5	02	1	25	c	22	4	0 (G	R	, (31	.)	SI	Ł	10	ON	1			TO	1	H]	В	A				1			
	Q5	42		251	B :	13	5	7 (Έ	,	F :	,		SI	L	IC	40	ı			RO	н	M						1			
	Q 5	43	1	25	C:	16	8	5 (Q	,	R)		SI	L	10	10	ı			MA	T	SI	ISI	41	T	A					
	Q5	44	1	T	Ċ:	11	4	Y 5	3			• •		SI	Ĺ	IC	.01	ï			RO	H	M									
	Q5	45	ı	T	A:	11	4	W.	\$					SI	L	10	10	i			RO	H	М						-			
	Q 5	55	1 :	25	C:	16	8	5 (Q	,	R)		S I	L	10	10	ı			MA	T	sı	JSI	ΗI	T	A		- (
	Q 5	56	li	25	D	20	16	1 (Œ	,	F:)		SI	L	10	10	ı			RO	H	M						- 1			
	0.5	57	1	25	B:	11	8	7 ((E	,	F:)		SI	L	10	01	ı			RO	H	M									
	Q 5	58		25	À!	56	4	Ä	Ġ	,	R)		SI	L	10	10	Ė			MA	Ť	S١	JS	ΗI	Ť	A					
	Q 5	81	l	2 5	D	12	6	6	(P	,	Q:)		SI	L	10	:01	ŧ			ΜA	T	SI	JS	ΗI	۲,	Α		- 1			
	Q 5	83	1	25	C:	16	8	5	(G		R)		SI	L	10	10	ı			ΜA	T	Ş١	JS	ΗI	Τ.	A		-			
	Q 5	85	1	28	K	10	15	(1	Ε,	F)			F.	ε	٠,٦					NE								- 1			
	Q6	11		2 S	C	16	8	5	(G	1	R)		SI	L	10	10	1						JS	ΗI	T.	A		Л.			
	Q6	12		28	À	73	3	A	(F	,	Q)		SI							NE	-										
	Q6	13		2 S	C	17	4	0	s	R		S)	SI	L	1	100	١			RC)H	М						- 1			
	Q6	32		DΤ	A	11	4	Υ:	5					SI	L	1	:01	V			RC								- 1			
	Q6	33		DΤ	C	14	4	E	5					SI	Ļ	1	:0	V			RC								- 1			
	0.6	81	١.	25	В	12	8	7						SI	L	10	:01	٧			RC)H	M									
	0.6	82	Γ.	25	D	17	6	5						SI	Ĺ	1	0	١			RC	H	M									
	0.6	83	١.	28	¢	17	14	0	S	R	,	S)	SI	L	1(:01	٧			RC								- 1			
	9.6	84		28	A	93	53	S	(F	,	s)					01				RC								- 1			
	Q6	85	1	2 S	C	17	14	0	5 (R	,	S)				01				RC								- 1			
	26	86	L	25	C	17	4	0	S	R		S	>				COL				RC											
	Qé	87		25						R	,	S)				:01				R								-			
	0.6	88		DT	A	14	. 4	E	S								CO				RC	-							- 1			
	Qé	89	1	25	D	21	4	4	5 (۲V	W)					01				R								- [
	0.6	90		2 S	D	21	<u>t</u> 4	4	S	V	W)		SI	L	1	COI	N			R	H	M						- 1			

I. C. s

Δ	ITEM	PART	NUMBER	D	£	s	С	R	I	P	Т	1	0	N	AREA
	1C501 1C502 1C590 1C591 1C633	STK419 UPD751 TC9163 XRA152 LB1639	106CW-168 5N 218N	I.0 I.0 I.0				1	SAI NE	SH:	BA				
				-					-	11	121	A:E	En	riVI.	PIA:PITTS

Diodes

Δ	ITEM	PART NUMBE	RDESC	RIPTION	AREA
	D051	188133	SILICON	ROHM	
	D052	1SR139-200	SILICON	ROHM	1
	0053	1SR139-200	SILICON	ROHM	1
	0054	1SR139-200	SILICON	ROHM	1
	D055	MTZ6.8JC	ZENER	ROHM	
	D056	1SR139-200	SILICON	ROHM	1
	D057	MTZ8.2JC	ZENER	ROHM	1
1	0501	188133	SILICON	ROHM	1
	D502	155133	SILICON	ROHM	i
	D503	155133	SILICON	ROHM	
	0504	RD9.1JSB3	ZENER	NEC	1
1	D505	188133	SILICON	ROHM	1
ĺ	0506	188133	SILICON	ROHM	1
	D507	188133	SILICON	ROHM	1
	D508	1SR139-200	SILICON	ROHM	
	0551	S3V2OF	SILICON	SINDENGEN	
1	D552	S3V20F	SILICON	SINDENGEN	1
l	0553	S3V20F	SILICON	SINDENGEN	1
	D554	S3V20F	SILICON	SINDENGEN	1
	D555	1SR139-200	SILICON	ROHM	
	D556	15R139-200	SILICON	ROHM	1
	D557	1SR139-200	SILICON	ROHM	1
	0558	1SR139-200	SILICON	ROHM	
	D559	RD24JSB3	ZENER	NEC	1
	D560	MTZ13JC	ZENER	ROHM	

Diodes

Δ	ITEM	PART	NUM	BER	D	E	s	С	R	1	P	Т	ī	0	N	AREA
	D564	MTZ12	JC		ZEN	ER				ROI	łM					
	D565	RD12J	883		ZEN	ER			1	NE	2					
	D566	15513	3		SIL	IC	ON		1	RO	M					İ
	D567	MTZ13	JC		ZEN	ER			- 1	ROI	H.					
	0568	RD6.8	JSB3		ZEN	ER				NE	C					
	D569	RD12J	SB3		ZEN	IER			1	NE	0					
	D570	MTZ10	JC		ZEN	ER				ROI	ΗМ					
	D571	1SR13	9-200		SIL	IC	ON			ROI	НM					1
	D572	1SR13	9-200		SIL	.10	ON			ROI	нм					1
	0575	1SR13	9-200		SIL	.10	ON			RO	нм					
	D576	1SR13	9-200		SIL	10	ON			RO	HM					
	D577	MTZ30	JC		ZEN	IER	1			RO!	ΗМ]
	0578	15513	3		SIL	.10	ON			RO1	ΗМ					1
	D585	MTZ11	JC		ZEN	I E R	1			RO	ΗМ					
	D611	15513	3		SIL	.10	ON			RO	HM					
	D632	MTZ4.	7JB		ZEN	IEF	2			RO	HM				,	Ï
	D633	15513	3		SIL	. 10	ON			RO	ΗМ					
	D634	MTZ5.	1JB		ZEP	(EF	t			RO	ΗМ					
	D635	MTZ5.	1 J B		ZEI	NEF	t			RO	HМ					1
	D636	15513	3		SIL	.10	ON	1		RO	ΗM					
	D639	15513	3		SIL	.10	ON			RO	HM					
	D640	18813	3		SIL	.10	ON			R0	ΗМ					
	D642	1SR13	9-200		SII	-10	ON	1		RO	ΗМ					
	0681	15513	3		SII	. 1 (ON	1		RO	нм					
					-	-		_	-	_	Δi	:151	Λ:F	E	ΊΥί	PIA:RIT

Capacitors

Δ	ITEM	PART	NUMBER	DE	s c	R	ī	P	т 1	0	N	AREA
	C001	QCZ90	50-103A	0.01M	F			CE	RAM	1 C		
	C051		HM-106	10MF		500			ECT			
	C052		4M-227	220MF		50V			ECT			
	C053		HP-103	0.01M		500			RAM			
	C055		EM-477 AM-107	470MF		25V 10V			ECT ECT			
	C057		CM-226	22MF		16V			ECT			
	C058		CM-103	0.01		16V			RAM			
	C059	QCZOZ	05-155	1.5MF	: ;	25V		CE	RAM	IC		
	C501	EEZ10	05-106	10MF		100V			ECT			
	C502		05-106	10MF		100V	1		ECT			
	C503		HJ-101	100PF		50V			RAM			
	C504		HJ-101	100PF		50V			RAM			
	C505		HK-820 HK-820	82PF 82PF		50V 50V			RAM Ram			
	C507		EM-107	100MF		250			ECT			
	C508		EM-107	100MF		250			ECT			
	C509		HJ-5RO	5PF		500			RAM			
	C510		HJ-5RO	5PF		50V		CE	RAM	IC		
	C511		HM-226	22MF		501		EL	ECT	RO		
	C512		HM-226	22MF		50V		EL	ECT	RO	. ,	
	C513		HM-476	47MF		50V			ECT			
	C514		HM-226	22MF		50V			ECT			
	C515		HJ-104	0.1MF		50V		1.	FIL	M		
	C516		HJ-104 HJ-104	0.1MF		50V 50V		ļ.,	FIL	<u></u>		
	C518		H3-104 HM-105	1MF		50V			ECT			
	C521		HP-102	1000F		50V			RAM			
	C522		HJ-100	10PF		50V			RAM			
	C523		AM-476			1001	,		ECT			
	C525		HJ-104	47MF	:	50V			FIL			
	C526	QFV81	HJ-104	0.1MF		500			FIL			1
	C527	QFV81	HJ-104	0.1MF	=	50V		Т.	FIL	М		
	C531		HM-224	0.221		50V			ECT			1
	C532	QETB1	HM-106	10MF		50V			ECT			
	C533		HM-474	0.471		50V			ECT			
	C534		HM-224	0.221		50V		EL	ECT	RO		
	C536		HM-224	0.22		50V			ECT			
	C539		HP-472 HM-227	4700F		50V 50V			RAM			
*	C541	OFTR1	HM-227	ZZOMI		50V	*****	FL	ECT	RO		
	C542		HM-226	22MF		50V		EL	ECT	RO		
	C544		HM-226	22MF		50V		EL	ECT	RO		
	C551	QCF21	HP-473	0.047	7 M F	50V			RAM			
	C552	QCF21	HP-473	0.047	7MF	50V		CE	RAM	1 C		
	C553	QFV81	HJ-154	0.15	4 F	50V	*****	Τ.	FIL	M		
	C554		EM-228	22001	4 F	25V			ECT			
	C555		EM-338	3300	4F	257			ECT			
	C556		HP-103	0.01	MF	5001			RAM			
	C557		HP-103 HP-103	0.01	9 F	5001		CE	RAM	T.C.		
	C559		05-688T	68001		5001	•	FI	ECT	PG		
	C560		05-688T	68001				FI	ECT	RD		
	C567		EM-106	10MF		25V		EL	ECT	RO		
	C568		HP-103	0.01		500			RAM			1
	C569	QET61	CM-226	ZZMF		16V		ËĹ	ECT	RO		1
	C570	QETB1	AM-476	47MF 2.2M		101			EC1			
	C572		HM-225	2.2M	F	50V			EC1			1
	C573		CM-226	22MF		16V			EC1			1
	C574		HP-103	0.01 22MF	M F	50V			RAN			
	C575		CM-226 HP-103		M E	16V 50V			ECT RAN			1
	C579		EM-338	3300		257			EC1			
	C585		AK-104	0.1M		100	v	MY	LAF	2		F
	C587		CM-226	ZZMF	•	160	•		EC1			
	C589	QCF21	HP-103	0.01	MF	50V	• • • • •	CE	RAN	iic		1
	C591		CM-476	47MF		167			EC1			
	C595	EEZ10	05-106	10MF		100	٧		EC1			1
	C596	EEZ10	05-106	10MF		100			ECT			
	C597		HM-475	4.7M	F	50V		FI	ECT	RO		1

Capacitors

Δ	ITEM	PART NUMBE	DES	C R I	PTION	AREA
Г	C598	QETB1HM-475	4.7MF	50V	ELECTRO	
	C599	QCZ0205-155	1.5MF	25V	CERAMIC	
1	C601	QETB1HM-475	4.7MF	50V	ELECTRO	
1	C602	QETB1HM-475	4.7MF	50V	ELECTRO	
ļ	C606	QCVB1CM-103	0.01MF	16V	CERAMIC	ļ
	C611	QEK51CM-226	22MF	16V	ELECTRO	
l	C612	QER51CM-476	47MF	16V	ELECTRO	i
	C631	QETBOJM-477	470MF	6.3V	ELECTRO	
	C632	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C633	QETB1HM-105	1MF	50V	ELECTRO	l
	C634	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C637	QETB1CM-476	47MF	16V	ELECTRO	
	C638	QCBB1HK-101	100PF	50V	CERAMIC	
	C639	QCBB1HK-101	100PF	50V	CERAMIC	
1	C645	QER51CM-476	47MF	16V	ELECTRO	l
1	C646	QCF21HP-102	1000PF	50V	CERAMIC	
1	C647	QERS1HM-474G	0.47MF	50V	ELECTRO	
I	C648	QER51HM-225G	2.2MF	50V	ELECTRO	
1	C649	QER51CM-476	47MF	16V	ELECTRO	
1	C650	QETBOJM-477	470MF	6.3V	ELECTRO	
1	C933	QFN81HK-104	0.1MF	50V	MYLAR	
1	C934	QFN81HK-104	0.1MF	50V	MYLAR	

▲ I: ISIA:FIEITIYI IPIAIRITIS

Resistors

ne:	sisto	ors										
Δ	1 T E M	PART	NUMBE	R D E	s	C I	R I	P	т	1 0	N	AREA
Δ	R001	QRC128	(-275EM	2.7M		1/	2W	co	MP(osı		A
Δ	R051	QRG012.		550		1 W				IL		A
Δ.	R051 R051	QRG012.	J-181AM	180 220		1W				FILI		B
ω.	R052	020167	1-222			1/			RB('
	R053	QRD167.	1-222	2.2K		1/			RB			
	R054 R055	QRD167.		147K		1/			RB(
Δ	R057	QRD14C.		47K 22 2.7		1/				CARI	BON	В
Δ	R057	QRD14C.	J-2R2S	2.2		1/		UN	F.	CAR	NOE	F
Δ	R059 R060			2.2		1/	4₩			CAR		A
Δ	R500	QRD14C.		180		5.M		0.	M.	FIL	M	Ä
Δ	R500	QRG022.	J-221A	220		2W		0.	М.	FIL	M	8
Δ	R500	QRG022.	J-221A	220 1K		2 ₩				FIL	4	F
	R501 R502	QRD167.		1 K			6W		RB			.
	R503	QRD167.		47K			6W		RB			
	R504	QRD167.	J-473	47K			6W		RB			
Δ	R505	QRZ007	7-391	390			44			BL E BL E		
-	R507	QRD167.	J-471	470			6W		RB			
	R508	QRD167.	J-471	470		1/	6W	CA	RB	ON		
	R509 R510	QRD167.		56K			6W		RB			
Δ	R511	QRD14C		2.7			4 W			CAR	BON	
Δ	R512	QRD14C	J-272S	2.7K		1/	44	UN	IF.	CAR	BON	
Δ	R513 R514	QRD14C	J-272S	2.7			44	UN	F.	CAR	BON	
Δ	R515	QRD14C	J-2725	0.22		14	4 14	M.	FI	CAR	BUN	
Δ	R516	QRXO12.	J-R22AM	0.22		1 W		M.	FI	LM		
Δ	R517	QRZ007	7-101	100			4 W			BLE		
Δ	R518 R519	QRZ007		10			48			BLE Car	DOM:	
Δ	R520	QRD14C		10			44			CAR		
Δ	R521	QRD14C.	J-100S	по	•••••	1/	4₩	UN	IF.	CAR	BON	
Δ	R522 R523	QRD14C		10 82K			6W		IF.	CAR	BON	
	R524	QRD167		100			6W		RB			
	R525	QRD167	J-104	100		1/	6W	CA	RB	ON		
Δ	R526 R527			10 10K			4 W		IF.		BON	
	R528	QRD167		10K			6W		RB			
	R529	QRD167		10K			6W		RB			
Δ.	R530	QRD14C	J-100S	10			4₩			CAR	BON	
	R531 R532	QRD167		1.8 10K	•		6W		RB			1
	R533	QRD167	J-103	10K			6W		RB			
	R534	QRD167	J-473	47K			6W		RB			
	R535 R537	QRD167	J-332	3.30	·		2W	C.F	\RB	ON TWO	D.V	
	R538	QRD12C		330			2 W	R.	NE.	TWO	RK	1
}	R539	QRD167	J-221	220		1/	6W		RB			İ
Δ	R542 R543	QRD14C	J-100S	10			4.			CAR	BON	
	R543	QRD167	J-300	18			6W		RB			B
	R543	QRD167	J-180	18			6W		ARB			F
Δ	R544	QRG022	J-472AM	4.71 1K	(21				FIL	M	
	R545 R546.	QRD167		2.21	e		6W		ARB ARB			1
	R550	QRD167	J-562	5.6	<		6W		RB			1
1	R551	QRD167	J-104	100	<	1/	6W	C	ARB	ON		
	R552 R553	QRD167		100			6W		ARB			
Δ	R556	QRD167	J-R22AM J-152	1.5		1 h	6W		.FI ARB			
	R558	QRD167	J-472	14. 71	ζ	1/	6W	C	ARB	ON		1
Δ	R559 R561	QRGOZZ	J-102AF	1K		21		0.	м.	FIL	M	
4	R565	QRZ007	J-102AF	1K 10		24	44	FI	.m. JSI	FIL	М	
L	R567	QRD167		16K			6W		ARB			
_					_				-			

Resistors

R569 0R0167J-163 16K 1/6W CARBON R567 0R0167J-1073 47K 1/6W CARBON R571 0R0167J-103 10K 1/6W CARBON R571 0R0167J-104 100K 1/6W CARBON R575 0R0167J-103 16K 1/6W CARBON R575 0R0167J-163 16K 1/6W CARBON R575 0R0167J-163 16K 1/6W CARBON R576 0R0167J-163 16K 1/6W CARBON R576 0R0167J-163 16K 1/6W CARBON R576 0R0167J-163 16K 1/6W CARBON R576 0R0167J-163 16K 1/6W CARBON R576 0R0167J-163 16K 1/6W CARBON R577 0R0167J-473 47K 1/6W CARBON R581 0R0167J-133 5.3 K 1/6W CARBON R581 0R0167J-133 5.3 K 1/6W CARBON R581 0R0167J-104 100K 1/6W CARBON R588 0R0167J-104 100K 1/6W CARBON R588 0R0167J-104 100K 1/6W CARBON R588 0R0167J-104 100K 1/6W CARBON R589 0R0167J-102 1K 1/6W CARBON R596 0R0167J-102 1K 1/6W CARBON R596 0R0167J-102 1K 1/6W CARBON R596 0R0167J-102 1K 1/6W CARBON R596 0R0167J-102 1K 1/6W CARBON R601 0R0167J-103 1K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R602 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R602 0R0167J-104 100K 1/6W CARBON R603 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W CARBON R601 0R0167J-104 100K 1/6W	Δ	ITEM	PART	NUMBER	DE	s	С	R I	P	Т	0	N	AREA
R570 RR0167J-104 100K 1/6W CARBON R571 RR0167J-163 16K 1/6W CARBON R575 RR0167J-163 16K 1/6W CARBON R576 RR0167J-163 16K 1/6W CARBON R577 RR0167J-473 47K 1/6W CARBON R578 RR0167J-473 47K 1/6W CARBON R578 RR0167J-473 47K 1/6W CARBON R581 RR0167J-473 47K 1/6W CARBON R581 RR0167J-332 5.3K 1/6W CARBON R581 RR0167J-332 5.3K 1/6W CARBON R584 RR0167J-301 100K 1/6W CARBON R585 RR0167J-104 100K 1/6W CARBON R586 RR0167J-104 100K 1/6W CARBON R588 RR0167J-104 100K 1/6W CARBON R589 RR0167J-471 470 1/6W CARBON R589 RR0167J-471 470 1/6W CARBON R599 RR0167J-473 47K 1/6W CARBON R599 RR0167J-102 1K 1/6W CARBON R600 RR0167J-102 1K 1/6W CARBON R600 RR0167J-102 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-103 1K 1/6W CARBON R600 RR0167J-104 100K 1/6W CARBON R600 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R602 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R601 RR0167J-104 100K 1/6W CARBON R602 RR0167J-104 100K 1/6W CARBON R603 RR0167J-104 100K 1/6W CARBON R603 RR0167J-104 100K 1/6W CARBON R603 RR0167J-104 100K 1/6W CARBON R603 RR0167J-104 100K 1/6W CARBON R603 RR0167J-104 100K 1/6W CARBON R603 RR0167J-107 1/6W CARBON R603 RR0167J-107 1/6W CARBON R603 RR0167J-107									-				
R571 RR0167J-104 100K													
R575 RR0167J-163													
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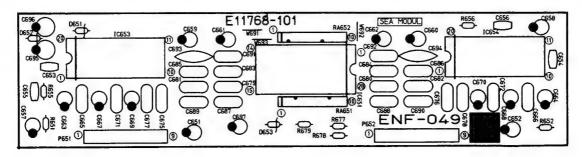
Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
		EWT011-092	TERMINAL WIRE	
		SBSG3010Z	SCREW	
	1	ETP1000-48JA	POWER TRANSFORMER	A
		E12259-002	CIRCUIT BOARD	Α
		ETP1000-48FA	POWER TRANSFORMER	В
		E12259-102	CIRCUIT BOARD	В
		ETP1000-48EA	POWER TRANSFORMER	F
	1	E12259-102	CIRCUIT BOARD	F
	J501	EMB90TV-802A	SPEAKER TERMINAL	
	J502	QMS6312-025	HEADPHONE JACK	
	J521	EMV5125-013	PLUG ASSY	
	J561	EMNOOTV-608A	&P PIN JACK	A
	J561	EMNOOTV-604A	6P PIN JACK	В
	J561	EMNOOTV-608A	6P PIN JACK	F
	J971	EMV7122-005	CONNECTOR	
*	J972	EMV7122-103	CONNECTOR	
	J974	EMV7122-103	CONNECTOR	
	J975	EMV7122-103	CONNECTOR	i
	K501	EN28101-007	FERRITE BEADS	
	K502	ENZ8101-007	FERRITE BEADS	
	L501	EQL0001-R45	INDUCTOR	
	L502	E9L0001-R45	INDUCTOR	
	L503	EQL0001-R45	INDUCTOR	l
	P521	EMV7125-013R	CONNECTOR	1
	P601	QMV5004-002	PLUG ASSY	1
	5002	QSS1L22-E01	SLIDE SWITCH	В
	EP001	E70859-001	EARTH PLATE	
	EP002	E70859-001	EARTH PLATE	A
	FT001	EMG7331-002	FUSE CLIP	A
	FT001	EMG7331-002	FUSE CLIP	F
	FT002	EMG7331-002U	FUSE CLIP	A

Others

Δ	ITEM	PA	R	Т	N	UI	M E	E	R	D	E	s	С	R	ı	P	Τ	I	0	N	AREA
	FT002	EM	G7	733	1-	-00	121	J		FUS	E	CL	ΙP								F
	FT003	EM	G?	733	1-	-00	30			FUS	ĒΕ	CL	ΙP								[
	FT004	EM	G7	733	1-	00	21	J	-	FUS	E	CL	ΙP								1
	FT005	EM	G7	733	1-	00	2			FUS	Ē	CL	IΡ								
	FT006	EM	G 7	733	1-	-00	21	J		FUS	ĒΕ	CL	ΙP								
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	FW502	EW	R:	37E	-3	501	s'	T		FLA	١T	WI	RE								
	FW511	EW	R:	35E	-4	0	35	Ť		FL	١T	WI	RE								i
	FW512	EW	R:	33E	-3	555	35	T		FLA	\T	WI	RE								
	FW551	EW	R:	39E	3-2	205	SS	Т		FLA	\T	WI	RE								
••••	FW553	EW	R.	33E	3-1	LO	S	T		FLA	T	WI	ŘË		••••						
	FW681	EW	R:	3 3 E	3-1	101	(\$	Т		FLA	ìΤ	WI	RE								
	FW701	EW	R:	37E	- 1	251	S	Ŧ		FLA	١T	WI	RE								
	HS557	E7	0	945	-1	141	ЭВ			HE	۱T	SI	NK								
	HS581	E7	0	945	-1	151	ЭВ			HE	AT.	SI	NK								1
	JA211	EM	V.	712	7.	-0	11			COL	NI	CT	OR			****	*****]
	JA311	EM	IV:	712	7-	-0:	15			COL	INE	CT	OR								i
	JB901	EM	V:	712	3.	-0	28			CO	IN	ECT	OR								ł
	JT503	EM	V:	712	22.	-16	3			COL	IN	CT	OR								
	JT504	EM	V	712	22-	-06	04			COL	INE	CT	OR								
	RY001	ES	K	1 D 1	2	-1	16	M		REI	.A	<i>(</i>									A
	RY001	ES	K	1 D 1	2.	-1:	17	M		REI	.A1	1									В
	RY001	ES	ĸ	1 D 1	2.	-1:	17	M		REI	_A1	1									F
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■ ENF-049 □ SEA Module PC Board Ass'y

Note: ENF-049 \square varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENF-049 B	the U.S.A., Australia Other Countries the U.K. (with LW) Continental Europe (with LW) Switzer Land (with LW)
ENF-049 C	West Germany (with LW) Italy (with LW)

I.C.s

Δ	ITEM	PART	NUMBER	D	E	s	С	R	I	P	т	I	0	N	AREA
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Capacitors

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	C651	QEK51	M-4	75G	4.	7 M F			5 V		EL	ΕC	TR	0			
	C652	QEK51	M-4	75G	4.	7MF		25	5 V		EL	EC	TR	0			
	C653	QCSB1	IJ-4	70	47	PF		50	VC		CE	RA	ΜI	С			
	C654	QCSB1	11-4	70	47	PΕ		50	VC		CE	RA	ΜI	С		-	
	C655	QCBB1				OPF		50	VC		CE	RA	ΜI	C			
	C656	QCBB1	K-1	01	10	OPF		50	V		CE	RA	MI	C			
	C657	QEK51	M-4	75G		7MF		2:	5 V		EL	EC	TR	0			
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	C661	QEK51				7MF			5 V			EC					
	C662	QEK51				7MF			5 V			EC				}	
	C663	QEK51				47M			VC			EC					
	C664	QEK511				47M			VC			EC				Į	
,	C665	QFV81				12M			٧c			FI					
	C666	QFV81				12M			VC			FI				1	
	C667	QEK51				2 2 M			٥v			EC					
	C668	QEK51				22M			٥v			EC					
	C669	QEK51				2 2 M			VC			EC					
	C670	QEK51				2 2 M			D۷			ΕC					
	C671	QFV81	11-4	73		047			٥v			FI					
	C672	QFV81	1J-4	73	p.	047	MF	50	٥v			ŦΙ					
	C675	QFV81	4J-1	04	þ.	1MF		5(٥v		Τ.	FΙ	LM			1	
	C676	QFV81	4J-1	04	ю.	1MF		50	VO		Τ.	FΙ	LM				
	C677	QFV81	4J-1	83	þ.	018	MF	50	V		т.	FI	LM				
	C678	QFV81	HJ-1	83	0.	018	MF	56	٥v		Τ.	FI	LM				
	C679	QFV81	HJ-3	93	þ.	039	MF	50	٥V		т.	FI	LM			1	
	C680	QFV81	HJ-3	93	0.	039	MF	50	٥v		т.	FÌ	LM	ļ			
	C681	QFN81	4J-6	82		OOP		51	٥v		MY	LA	R				
	C682	QFN81			68	OOF	F	50	٥v		MY	LA	R			l	
	C683	QFV81	HJ-1	53	0.	015	MF	56	ÖV		Τ.	FI	LM	1			
	C684	QFV81	HJ-1	53	0.	015	MF	51	٥v		т.	FI	LM	l			
	C685	QFN81	HJ-2	72	27	OOP	F	51	٥v		MY	LA	R				
	C686	QFN81	HJ-2	72	27	OOP	F	5	٥V		MY	LA	R				
	C687	QFN81	HJ-5	62	56	OOP	F	5	Dν		MY	LA	R			l	

Capacitors

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	1	: 6	9	5		Q I	Ē,	TE	3 1	A	M	- :	ιo	7			110	00	M	F		1	0	٧		ε	Ļ	EC	T	0						
	0	6	9	6	1	QI	Ε.	TE	3 1	A	M	- :	10	7			11	00	MI	=		1	0	٧		Ε	L	EC	TI	80						
	1	6	9	7	1	e	Ε.	TE	3 1	A	M	-:	10	7			11	00	MI	=		1	0	٧		E	L	EC	T	10						

Resistors

Δ	ITEM	PART	NUMBE	R D	E	s	С	R	ī	P	Т	I	0	N	AREA
	R655	QRD167 QRD167 QRD167	7J-822 7J-912	8.3	2K LK		1	161	W W	CI	ARB ARB	ON			
	R656 R677	QRD16		270				16			ARB				

Resistors

Δ	ITEM	PART	NUMBE	DE	SCRI	PTION	AREA
	R678	QRD167	J-271	270	1/6W	CARBON	
	R679	QRD16	J-122	1.2K	1/6W	CARBON	
	RA651	QRB099		470K		R.NETWORK	
	RA652	QRB099	71-474	470K	1/10W	R.NETWORK	
_							
						A I: SIA:FETTIYI	PIART

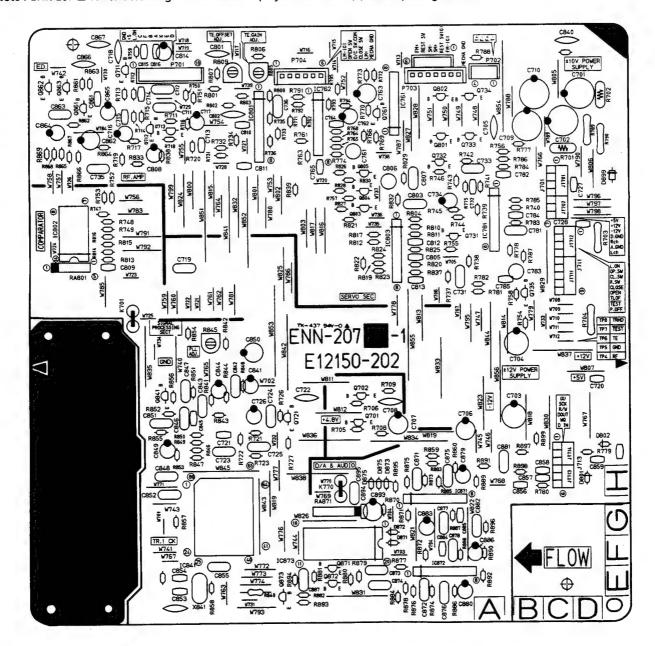
Others

Δ	ITEM	PART	NUMBER	DI	e s	С	R	Р	т	1	0	N	AREA
		E11768 EMV510	1-009B	CIRC	AS	SY	OARD	1					
	P652	EMV510	1-009B	PLUG	AS	SY							

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■ENN-207 □ CD PC Board Ass'y

Note: ENN-207 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENN-207 D	the U.S.A.
ENN-207 🗉	Australia, Other Countries Continental Europe (with LW) the U.K. (with LW) Switzer Land (with LW)
ENN-207 F	West Germany (with LW) Italy (with LW)

Transistors

Q701				D	r,	>	C	K	I	P	T	1	0	N	^	. K	ĒΛ
	2SA934	(Q,R)	,	SIL	10	ON		F	201	IM					Γ		
0702	DTC144	WS		SIL	10	ON		F	ROF	łΜ							
Q711	280535	(B,C))	SIL	10	ON		Ŧ	111	A	CHI						
9712	250174	OSCR	· S >	SIL	IC	ÓΝ		F	ROF	M							
9713	2SA933	S (R > S	3)	SIL	IC	ON		F	ROF	M					i		
0721	250214	4S (VV	()	SIL	IC	ON		F	ROF	IM					Ι	• • • •	
Q731	250214	45 (VV	()	SIL	IC	ON		F	ROF	M							
9732	2SA933	SCRAS	3)	SIL	IC	QΝ		F	ROF	M							
Q733	2SC206	0 (Q . F	()	SIL	IC	ON		۶	ROF	M							
Q734	258135	7 (E . F	•)	SIL	10	ON		F	109	M							
0735	DTA144	WS		SIL	IC	ON		F	RÓF	١M					1		
Q761	2SD214	45 (V	()	SIL	IC	ON		F	109	M					1		
0801	250203	7 (E . F	F)	SIL	10	ON		F	ROP	IM.					-		
0802	2SB135	7 (E, 1	F)	SIL	.10	ON		F	109	łМ							
Q803	250214	45 (V)	()	SIL	.10	ON		F	201	4M							
0804	250214	45 (VI	4)	SIL	10	ON		F	108	111							
9805	250214	45 (VI	4)	SIL	IC	ON		F	201	łM					1		
9841	250214	45 (VI	4)	SIL	.IC	ON		1	ROP	łΜ							
0861	2SA933	SCR	\$)	SIL	IC	ON		F	201	łМ							
9862	250174	05 (R.	(\$)	SIL	IC	ON		F	ROI	M							
0863	250174	OS (R.	(5)	SIL	IC	ON		F	ROI	IM					1		
Q871	250214	45 (VI	4)	SIL	.IC	ON		F	ROI	łМ					1		
Q872	250214	45 (VI	(4)	SIL	IC	ON		F	ROI	ΗM							
Q873	DTA114	YS		SIL	. 1 0	ON		F	RO	IM							
	9713 9721 9731 9732 9733 9734 9735 9801 9802 9803 9804 9804 9805 9841 9861 9862 9861 9862 9863	9713 2SA933 9721 2SD214 9731 2SD214 9732 2SA933 9733 2SC206 9734 2SB155 9735 DTA144 9761 2SD214 9801 2SD203 9802 2SB135 9803 2SD214 9804 2SD214 9804 2SD214 9805 2SC174 9806 2SC174 9807 2SD214 9808 2SD214 9809	9713	9713	9713	9713	9713	9713	9713	9713 2SA933S(R,S) SILICON ROP 9721 2SD2144S(VW) SILICON ROP 9731 2SS2144S(VW) SILICON ROP 9732 2SA933S(R,S) SILICON ROP 9733 2SC2060(Q,R) SILICON ROP 9734 2SB1357(E,F) SILICON ROP 9735 DTA144WS SILICON ROP 9736 2SD2144S(VW) SILICON ROP 9801 2SD2037(E,F) SILICON ROP 9802 2SB1357(E,F) SILICON ROP 9803 2SD2144S(VW) SILICON ROP 9804 2SD2144S(VW) SILICON ROP 9805 2SD2144S(VW) SILICON ROP 9806 2SSD2144S(VW) SILICON ROP 9807 2SD2144S(VW) SILICON ROP 9808 2SD2144S(VW) SILICON ROP 9809 2SC1740S(R,S) SILICON ROP 9809 2SC1740S(R,S) SILICON ROP 9809 2SC1740S(R,S) SILICON ROP 9809 2SD2144S(VW) SILICON ROP 9809 2SD2144S(VW) SILICON ROP 9809 2SC1740S(R,S) SILICON ROP 9809 2SD2144S(VW) SILICON ROP 9809	0713 2SA933S(R,S) SILICON ROHM 0721 2SD2144S(W) SILICON ROHM 0731 2SD2144S(W) SILICON ROHM 0732 2SA933S(R,S) SILICON ROHM 0733 2SC2060(Q,R) SILICON ROHM 0734 2SB1357(E,F) SILICON ROHM 0735 DTA144WS SILICON ROHM 0736 2SD2144S(VW) SILICON ROHM 0801 2SD2037(E,F) SILICON ROHM 0802 2SB1357(E,F) SILICON ROHM 0803 2SD2144S(VW) SILICON ROHM 0804 2SD2144S(VW) SILICON ROHM 0805 2SD2144S(VW) SILICON ROHM 0806 2SD2144S(VW) SILICON ROHM 0807 08073 SILICON ROHM 0808 2SC1740S(R,S) SILICON ROHM 0809 2SC1740S(R,S) SILICON ROHM 0809 2SC1740S(R,S) SILICON ROHM 0809 2SD2144S(VW) SILICON 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2144S(VW) SILICON ROHM 0809 2SD2	0713 2SA933S(R,S) SILICON ROHM 0721 2SD2144S(W) SILICON ROHM ROT31 2SD2144S(W) SILICON ROHM ROT31 2SA933S(R,S) SILICON ROHM ROT32 2SA933S(R,S) SILICON ROHM ROT34 2SB1357(E,F) SILICON ROHM ROT35	Q713	Q713	9713		9713

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Δ	ITEM	PART NUMBEI	DESC	RIPTION	AREA
	10761	STA341M(A)	ı.c.	SANKEN	
	10762	VC4580L	I.C.	DAINICHI	1
	10781	VC4580L	I.C.	DAINICHI	
	10801	TL0725	I.C.		ì
	10802	BA10339	I.C.	ROHM	
	10803	VC4580L	I.C.	DAINICHI	
	IC841	YM71218	I.C.	YAMAHA	l
	IC871	XRA15218N	I.C.		
	IC872	XRA15218N	I.C.		
	IC873	LC7881-C	I.C.	SANYO	

Diodes

Δ	ITEM	PART	NUMB	ER	D	E	s	С	R	I	Р	т	ı	0	N	AREA
	D871 D872 D873 D899	188133 188133 MTZ5.: 18R139	3 LJB		SIL SIL ZEN SIL	I C	ON		1	ROI ROI ROI	HM HM					
							_			-	<u> </u>	ISI	\:F	E	ΓΙΥΙ	PARTIS

Capacitors

Δ	ITEM	PART NUMBE	RDES	C R	IPTION	AREA
	C701	QETB1CM-477	470MF	160	ELECTRO	
	C702	QETB1CM-477	470MF	16V	ELECTRO	
	C703	QETB1CM-227	220MF	16V	ELECTRO	i
	C704	QETB1CM-227	220MF	16V	ELECTRO	
1	C705	QCF21HP-223	0.022MF	50V	CERAMIC	
	C706	QETB1CM-476	47MF	16V	ELECTRO	
1	C708	QCF21HP-223	0.022MF	50V	CERAMIC	1
1	C709	QETB1CM-477	470MF	16V	ELECTRO	
1	C710	QETB1CM-477	470MF	16V	ELECTRO	
	C711	QFN81HJ-472	4700PF	50V	MYLAR	1
	C712	QFN81HJ-472	4700PF	50V	MYLAR	
1	C713	QCHB1EZ-223	0.022MF	25 V	CERAMIC	1
	C714	QCSB1HJ-3R9	3.9PF	50V	CERAMIC	1
	C715	QCBB1HK-471	470PF	50V	CERAMIC	1
ł	C716	QETB1EM-106	10MF	25V	ELECTRO	
	C717	QETB1CM-476	47MF	16V	ELECTRO	
1	C718	QCS21HJ-680	68PF	50V	CERAMIC	
	C719	QFV81HJ-183	0.018MF		T.FILM	1
İ	C720	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C721	QCSB1HJ-470	47PF	50V	CERAMIC	1

Capacitors

4	ITEM	PART	NUMBE	RDES	CR	IPTIO	N AREA
	C722	QCF21F		0.022M		CERAMIC	_ i
ı	C723	@CZ020		1.5MF	25V	CERAMIC	
ı	C724	QFV81		0.056		T.FILM	
ı	C725	QFV81		0.56MF	50V 25V	T.FILM ELECTRO	1
	C731		J-183	0.018M		T.FILM	
	C732		K-271	270PF	SOV	CERAMIC	
	C733		K-393	0.039M		MYLAR	
	C734	QEK51	CM-226	22MF	16V	ELECTRO	1
	C735		J-104	0.1MF	507	T.FILM	
	C736		11-224	0.22MF		T.FILM	.
	C761		1M-225	2.2MF	50V	NON POLE	
	C762		EM-226 JM-227	22MF 220MF	25V 6.3V	ELECTRO	
	C764		2-223	0.022M		ELECTRO CERAMIC	ļ
	C765		7-223	0.022M		CERAMIC	
1	C781		13-272	2700PF		MYLAR	
1	C782	QCBB1	K-101	100PF	50V	CERAMIC	į
	C783		HH-225	2.2MF	50V	NON POLS	:
	C784	QCHB1	EZ-223	0.022M	F 25V	CERAMIC	
	C785		2-223	0.022M		CERAMIC	
1	C801		CH-151	150PF	50V	CERAMIC	
	C802		CH-121	120PF	500	CERAMIC	1
	C803		HJ-223	0.022M		T.FILM	1
	C805		HJ-4R7 HM-225	4.7PF 2.2MF	50V 50V	CERAMIC NON POL	
	C807		HJ-563	0.056M		T.FILM	·
	C808		CM-476	47MF	167	ELECTRO	
	C809		EZ-223	0.022		CERAMIC	
	C810		EZ-223	0.022M		CERAMIC	- 1
	C811	QCHB1	EZ-223	0.022		CERAMIC	
	C812	QCHB1	EZ-223	0.022	F 25V	CERAMIC	
	C813		EZ-223	0.022M		CERAMIC	
	C815		EZ-223	0.025		CERAMIC	
	C816		EZ-223	0.022M		CERAMIC	
	C841		AM-107	100MF	10V	ELECTRO	
	C842		HJ-104 HJ-104	0.1MF	50V 50V	T.FILM T.FILM	
	C843		EM-106	0.1MF	25V	ELECTRO	
	C845		HK-101	100PF	50V	CERAMIC	
	C846		HJ-224	0.22MF	500	T.FILM	
	C847		HJ-182	1800PF	50V	MYLAR	1
	C848		HJ-224	0.22MF	500	T.FILM	j
	C849		EM-106	10MF	25V	ELECTRO	
	C850		JM-227	220MF	6.30	ELECTRO	
	C851		HJ-104	0.1MF	50V	T.FILM	
	C852		HJ-104	0.1MF	50V	T.FILM	
	C853		HJ-100 HJ-100	10PF 10PF	50V 50V	CERAMIC CERAMIC	
	C855		HJ-224	0.22MF	50V	T.FILM	ł
***	C856		HJ-470	47PF	50V	CERAMIC	
	C857		HK-101	100PF	50V	CERAMIC	1
	C858		HK-101	100PF	50V	CERAMIC	1
	C859	QCSB1	HJ-470	47PF	50V	CERAMIC	1
	C861		HK-101	100PF	50V	CERAMIC	
	C862		CM-107	100MF	16V	ELECTRO	
	C863		HK-473	0.047		MYLAR	
	C864		EM-106	10MF	25V	ELECTRO	
	C865		HM-105 HK-392	1MF 3900PF	50V	ELECTRO	
	C871		HK-392	3900P		MYLAR	
	C873		HJ-683	0.068		T.FILM	
	C874		HJ-683	0.0681		T.FILM	ı
	C875	QFV81	HJ-103	0.01MI		T.FILM	
	C876		HJ-103	0.01M	50V	T.FILM	
	C877		HK-222	2200PI	50V	MYLAR	
	C878		HK-555	2200PI		MYLAR	
	C879		EM-476	47MF	25V	ELECTRO	
	C880		EM-476	47MF	25V	ELECTRO	{
	C881		HK-562	5600PI		MYLAR	
	C882		HK-562	5600P1	50V 25V	MYLAR	l l
	C883		EM-106 EZ-223	10MF		CERAMIC	1
	C885		EZ-223	0.022		CERAMIC	ļ
	C886		EM-106	10MF	250	ELECTRO	I
.,	C887		HP-102	1000PI	50V	CERAMIC	
	C893		JM-227	220MF	6.3V		1
	C894		EZ-223	0.0221	4F 25V	CERAMIC	1
	C895	QFV81	HJ-124	0.12M		T.FILM	

Resistors

Δ	ITEM	PART	NUMBE	RDE	S	C R	1	Р	т	1	I N	AREA
Δ	R701	PTH610	308D2R2N					FU	SI	BLE	-	1
Δ	R702	PTH610	30BDZRZN	1						BLE		1
Δ	R703	QRZ007	77-100	10		1/41	ď	FU	SI	BLE	:	1
Δ	R704	QRZ007	77-100	10		1/41	N.	FU	SI	BLE	:	1
-	R705	QRD167	71-472	4.7K		1/6	H		RB			
	R706	QRD167	7J-472	4.7K		1/6	W.		RB]
1	R708	QRD167	71-222	2.2K		1/6	ri i			ON		1
ì	R709	QRD167	7J-181	180		1/6	ď			ON		
1	R711	QRD167	7J-183	18K		1/6	V			ON		I.
	R712	QRD167	71-432	4.3K		1/6	W		RB			
	R713	QRD16	7J-391	390		1/6	W.	CA	RB	ON		
1	R714	QRD16	7J-221	220		1/6	W	CA	RB	ON		1
1	R715	QRD16	7J-152	1.5K		1/6	W	CA	RB	ON		1
	R716	QRD16	71-561	560		1/6	W	CA	RB	ON		1
	R717	QRD16	7J-561	560		1/6	W	CA	RB	ON		

Resistors

Δ	ITEM	PART	NUMBER	DES	CRI	PTION	AREA
	R718	QRD167		5.6K	1/6W	CARBON	
	R719 R720	QRD167		1.5K 270	1/6W 1/6W	CARBON CARBON	
	R721	QRD167	J-471	470	1/6W	CARBON	
·····•	R722 R723	QRD167		6.8K 4.7K	1/6W	CARBON CARBON	
	R726	QRD167	J-102	1 K	1/6W	CARBON	
	R727	QRD167 QRD167		18K 100K	1/6W 1/6W	CARBON	
	R732	QRD167	J-104	100K	1/6W	CARBON	
	R733	QRD167		390K 390K	1/6W 1/6W	CARBON CARBON	
	R735	QRD167		120	1/6W	CARBON	
	R736 R737	QRD167 QRD167		1.8K 680	1/6W 1/6W	CARBON CARBON	
	R738 R739	QRD167		47K 330	1/6W 1/6W	CARBON CARBON	
	R740	QRD167		33K	1/6W	CARBON	
	R741 R742	QRD167		27K 390K	1/6W 1/6W	CARBON CARBON	
	R743	QRD167		1M	1/6W	CARBON	1
	R744 R745	QRD167		47 47K	1/6W 1/6W	CARBON CARBON	1
	R746	QRD167		2.7K	1/6W	CARBON	
ļ	R747	QRD167		6.8K	1/6W	CARBON CARBON	ļ
	R749		71-562	5.6K	1/6W	CARBON	1
	R750 R751	QRD16	7J-105 7J-105	1M 1M	1/6W 1/6W	CARBON CARBON	
	R752		7J-105 7J-104	100K	1/6W	CARBON	
	R753 R754	QRD16	7J-562	5.6K 100K	1/6W 1/6W	CARBON CARBON	
	R755		7J-104 7J-103	10K	1/6W	CARBON	
	R756 R757		7J-470	47 18K	1/6W 1/6W	CARBON	{
	R758	QRD16	7J-183 7J-183	18K	1/6W	CARBON	·
	R759	QRD16	7J-222 7J-564	2.2K 560K	1/6W 1/6W	CARBON CARBON	
	R762		7J-224	220K	1/6W	CARBON	
	R763		7J-393 7J-224	39K	1/6W	CARBON	
	R765		7J-224 7J-562	5.6K	1/6W	CARBON	
	R766	QRD16	7J-392	3.9K	1/6W 1/6W	CARBON CARBON	
	R769		7J-103 7J-102	10K	1/6W	CARBON	
	R770	QRD16	7J-471 7J-683	470 68K	1/6W 1/6W	CARBON CARBON	
	R772		7J-183	18K	1/6W	CARBON	
	R773	QRD16	7J-183	18K	1/6W 1/6W	CARBON CARBON	1
	R775		7J-470 7J-335	47 3.3M	1/6W	CARBON	
	R779		7J-152 7J-152	1.5K 1.5K	1/6W 1/6W	CARBON CARBON	1
	R781		71-684	680K	1/6W	CARBON	
	R782		7J-684 7J-823	680K	1/6W	CARBON	
1	R784	QRD16	71-470	47	1/6W	CARBON	
1	R785 R786		7J-683 7J-123	68K 12K	1/6W 1/6W	CARBON CARBON	
	R787	QRD16	7J-152	1.5K	1/6W	CARBON	
1	R788		7J-2R2 CJ-4R7S	4.7	1/6W 1/2W	CARBON R.NETWORK	
	R790	QRD12	CJ-4R7S	4.7	1/2W	R.NETWORK	
	R791		7J-513 7J-103	51K 10K	1/6W 1/6W	CARBON CARBON	
	R793	QRD16	7J-683	68K	1/6W	CARBON	1
	R794		7J-103 7J-221	10K 220	1/6W 1/6W	CARBON CARBON	
	R801	QRD16	7J-563	56K	1/6W	CARBON	
	R802	QRD16	7J-563 7J-394	56K 390K	1/6W	CARBON CARBON	
	R804	QRD16	7J-681	680	1/6W	CARBON	
	R805		01-202A 7J-561	2K 560	1/6W	VARIABLE CARBON	
	R807	QRD16	7J-334	330K	1/6W	CARBON	
1	R808		7J-222 01-154A	2.2K 150K	1/6W	CARBON VARIABLE	1
	R810	QRD16	71-223	22K 6.8K	1/6W	CARBON	
	R811 R812		7J-682 7J-103	6.8K	1/6W 1/6W	CARBON	1
	R813	QRD16	71-562	5.6K	1/6W	CARBON	
	R815	QRD16	7J-562 7J-562	5.6K 5.6K	1/6W 1/6W	CARBON CARBON	
	R816 R817		7J-562 7J-183	5.6K 18K	1/6W 1/6W	CARBON CARBON	
	R819		7J-103	iok	1/6W	CARBON	
	R820		7J-224	220K 18K	1/69	CARBON	
	R822		7J-183 7J-183	18K	1/6W 1/6W	CARBON CARBON	1
	R823	QRD16	7J-434	430K	1/6W	CARBON	
	R825		7J-434 7J-103	430K 10K	1/6W 1/6W	CARBON Carbon	
	R826	QRD16	7J-184	180K	1/6W	CARBON	
	R828	QRD16	7J-184 7J-184	180K 180K	1/6W 1/6W	CARBON CARBON	
[R829	QRD16	73-681	180K	1/6W	CARBON	
	R832		7J-183 7J-102	18K 1K	1/6W 1/6W	CARBON CARBON	
	R833	GRD16	71-562	5.6K	1/6W 1/6W	CARBON CARBON	
_		WKD16	71-470		T10M	CHROOM	-

Resistors

Δ	ІТЕМ	PART	NUMBER	DE	s c	R I	P	T	ı	0	N	AREA
	R838	QRD167	J-562	5.6K	1/	6W	C.	ARB	ON			
	R839	QRD167		18K		6W		ARB	-			
	R840	QRD167		560		6W		ARE				
	R841	QRD167		1.8K		6W		ARB				1
	R842	QRD167		220		6W		ARE				
• • • •	R843	QRD167		180K		6W		ARE				
	R844	QRD167		39K		6W		ARE				
	R845		1-104A	100K				ARI				
	R846	QRD167		220K	1/	6W		ARE				
	R847	QRD167		1.8K	1/	6W	C	ARE	ON			
	R848	QRD167		2.7K		6W		ARE				
	R849	QRD167	7-855	8.2K		6W	C.	ARE	ON			
	R850	QRD167	J-822	8.2K	1/	6W	C.	ARE	ON			
	R851	QRD167	J-821	820		6W	C	ARE	ON			
	R852	QRD167	J-182	1.8K	1/	6W	C.	ARE	ON			
	R853	QRD167		100		6W	C	ARE	ON		•	
	R854	QRD167	J-155	1.5M	1/	6W	C	ARE	ON			
	R855	QRD167	J-682	6.8K	1/	6W	C	ARE	ON			
	R856	QRD167	J-682	6.8K		6W	C	ARE	ON			1
	R857	QRD167	J-102	1 K	1/	6W	C	ARE	ON			
	R858	QRD167	J-105	1 M	1/	6W	Ċ	ARE	ON		•••••	
	R859	QRD167	7J-271	270	1/	6W	C	ARE	ON			1
	R860	QRD167	7J-271	270	1/	6W	C	ARE	ON			1
	R861	QRD167	J-103	10K	1/	6W	C	ARE	ON			
	R862	QRD167	73-272	2.7K	1/	6W	C	ARE	ON			
	R863	QRD167	J-102	1 K	1/	6W	C	ARE	ON			
	R864	QRD167	73-271	270	1/	6W	С	ARE	ON			
	R865	QRD167	7J~103	10K	1/	6W	C	ARE	ON			
	R866		7J-562	5.6K		6W		ARE	ON			
	R867		7J-472	4.7K	1/	6W	C	ARE	ON			
	R868		7J-822	8.2K	1/	6W	C	ARE	BON			
	R869		7J-103	10K		6W	_	ARE				1
	R870		7J-101	100		6W	С	ARE	BON			
	R871		7J-222	2.2K		6W		ARE				
	R872		71-222	2.2K		6W		ARE				
	R873		7J-751	750		6W		ARE				
	R874		7J-751	750		6W		ARE				
	R875		7J-471	470		6W		ARE				
	R876		7J-471	470		/6W		ARE				l l
	R877		7J-221	550		/6W		ARE				
	R878		71-221	550		6W		ARE				1
	R879		7J-105	1 M		/6W		ARE				1
	R880		7J-105	1 M		/6W		ARE				i
	R881		7J-392	3.9K		/6W		ARE				1
	R883		7J-392 7J-821	3.9K		/6W		ARE				
	R884		7J-821	820		/6W		ARE				
	R885		7J-821	820		/6W		ARE				1
	R886		7J-821	820		/6W		ARE				
	R887		7J-272			/6W		ARE				1
•••	R888	ORD14	71-272	2.7K		/ 6W		ARI				†
	R889		71-273	27K		/6W		AR				
	R890		71-273	27K		/6W		ARI				
	R891		7J-561	560		/6W	-	ARI				i
	R892		7J-561	560		/6W	_	ARI	-			1
* - * -	R893		7J-104	100K		/6W		ARI				1
	R894		7J-105	1 M		/6W		ARI				
	R895		7J-681	680		/6W		ARI	301	ı		1
	R896		71-392	3.9K		/6W		ARI				1
	R897		71-392	3.9K		/6W		ARI				
***	R898		71-302	3K		/6W		ARI				1
	R899		71-302	3 K		/6W		ARI				1
	RA801		5J-472	4.7K		/8W		. N			K	
	RA871		51-224	220K		/8W		. N				1
	1	1		1	_							

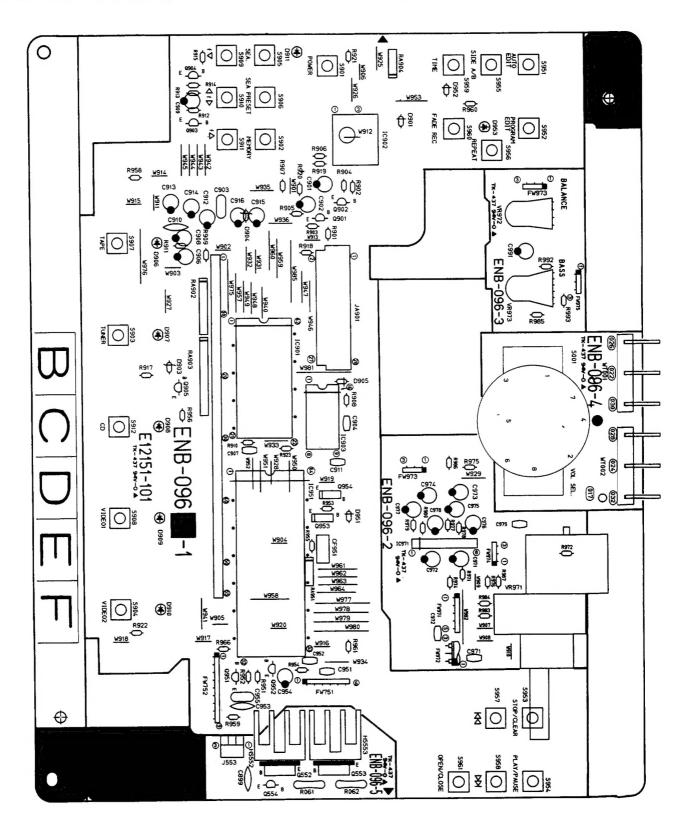
Others

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	K	7	70)	Ε	N	zε	1	0	1	-(C	8				ł	B	R	IT	B 1	BE.	AD:	S										1				
	P	7(1	. 1	E	M	V S	1	0	9	-(1	0	A			×	L	U	;	AS	S	٧											1				
	P	70)2	:	E	M	V S	1	0	9	- (0)4	A			k	L	U	3	AS	S	Y											. [
	P	70	3		E	M	٤٧	1	Ó	ġ.	-(00	6	A				L	U	5	ÀS	S	Y			•••								1		•		
	P	7(04		E	M	V:	1	3	3	-(0	6	K			,	٦L	U	3	AS	S	Y											1				
	IJΤ	7() 1		E	M	٧7	1	2	2	-(0) 4				k	0	N	۱E	C1	0	R											١				
	JT	70	2		Ε	M	٧7	1	2	2	-:	10	3				k	0	NI	١E	C1	0	R											١				
	UT	7	11		E	M	٧7	1	2	2	-(0) 5				k	0	NI	NE	C1	0	R											1				
	UT	7	12		Ë	M	V7	1	ż	2	-(00) 4				- k	0	NI	NE	CI	0	R			•••		•••	****					1				
	J T	7	13	;	E	M	V 7	1	2	2	- 5	ı)3	;			k	0	NI	NE.	C1	0	R											1				
	UT	7	14		E	M	V7	1	2	2	- :	l)3	,			k	0	NI	NE	C1	0	R											-1				
	XT	8	4 1		E	c	χC	1	6	9	-:	5 4	. 4	E	A		ŀ	RE	S	ON	A1	0	R											-				

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■ ENB-096 ☐ Front PC Board Ass'y

Note: ENB-096 ☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENB-096 B	the U.S.A.
ENB-096 C	Other Countries
ENB-096 D	Australia , the U.K. (with LW) Continental Europe (with LW) Switzer Land (with LW)
ENB-096 E	West Germany (with LW) Italy (with LW)

Transistors

Δ	1	Г	Ę	M	1	P	A	R	1	Γ_	1	N	U	M	Е	I	2 !	R	1	D	E		S	C	R	!	I	1	P	T		I	0	1	N	1	١ ١	? !	2/
	Q	5	5 2	2	T	2	s	В	1	18	37	. (E	,	F:	,			S	IL	.1	c	NC			F	0	н	4										
	Q	5	5	3	1	2	S	В	1	18	3 7	' (E	,	F)			S	IL	1	C	NC			F	0	HI	4							1			
	6	5	5	4	l	2	S	A	5	6		(Q	,	R)			S	IL	1	C	NC			١	IA	7 :	sι	SI	41	T	A			1			
	6	9	0	1	١	2	S	¢	1	68	3 5	6	Q	,	R)			S	ΙL	1	C	DN			M	۱A	T:	ŝU	SI	4 I	T	Α			1			
	G	9	0	2	1	2	S	C	1	61	35	5 (Q	,	R)			s	IL	1	C	ON			١	A	T:	su	SI	41	T	A			l			
	G	9	0	3	Ī	2	S	C	1	61	3	5 (Q	,	R)			S	ĪL	Ī	Ċ	ON			١	1A	T :	su	SI	41	T	A						
	G	9	0	4	ı	2	S	C	1	61	3 5	5 (Q	,	R)			S	ΙL	. I	CI	ON			٠	1A	T:	SU	SI	HI	T	Α						
	G	9	0	5	ı	D	T	C	1	1	41	15	;						s	IL	I	CI	DN			F	0	HI	ч										
	G	9	5	1	ı	0	T	A	1	1	٤١	15	;						s	IL	. 1	C	ON			F	0	H	ч							1			
	G	9	5	2	ı	C	T	A	1	1	4 1	15	;						s	IL	. 1	CI	ON			F	10	H	4										
	G	9	5	3	1	C	Ť	A	1	1	4	į	F		• • •		•••		5	ÏŁ	1	CI	ON					•••						•••					
	e	9	5	4		D	7	C	1	1	4١	/ F	F						S	IL	. I	CI	ON			F	10	HI	M										
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I.C.s

Δ	ІТЕМ	PART	NUMBER	D	Е	s	С	R	1	P	Т	ī	0	N	AREA
	IC901 IC902 IC903 IC951 IC971	LC7565 GP1U50 XR-105 HD6140 VC4580)1X)1DCP)81SB22	I . 6				1	SHA EXA	TAC			N		
									4	1:	ISI	٨F	Er.	ΓΙΥΙ	PIARTIS

Diodes

Δ	I	7	. 1	Ξ	M	1	P /	I	₹ 7	Γ	1	1	J	4	B	E	R		D	1	E	S	:	С	R		Ī	P		Т	ī	0	1	N		۸۱	R	Ξ/
		DS	,	1		Γ	15	s	1	33								s	1		1 C	0	N	_		R	01	4M							Τ			
		D9	20	3	,	1	MT	z	1	0J	C							2	E	NE	ER					R	01	H										
		DS	20	4		ŀ	MT	Z	5	. 6	J	c						2	E	NE	ER					R	01	HM						-				
		DS	0	5		ŀ	15	S	1	33	;							15	I	L	I C	0	N			R	01	HH							ĺ			
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		D۶	0	7		1	SL	H	-	34	٧	Ċ	3 F					L		E.	. D		•	••••	••••	R	ÖI	HM	***						T			
		D9	20	8		ı	Sι	H	-	34	٧	C	3 F	:				į.		E.	. D					R	01	HM							1			
	ı	D۶	0	9	•	ı	SL	.H	-	34	٧	C	3 F	•				L		E.	. D					R	01	HM							1			
		D۶				١	S١	.H	-	34	٧	C	3 8	•				L		E.	. D					R	0	HM							П			
	IJ	D۶	1	1			SL	. H	-	34	٧	C	3 F					L		E.	. D					R	0	HM							1			
		D٩	95	1		Ţ	15	5	1	33	;							S	1	Ļ	I C	Ó	N		•••	R	01	HM							1			
		D٩					15	S	1	33	,							15	I	L	I C	0	N			R	01	HM										
		DS	?5	3	•		sι	١.	- 1	34	٧	C	31					1	•	E.	. D	•				R	01	НМ										
		יט	•	, 2	•		SI	٠,	!-	34	٧	С	31						•	Ε.	.0	•				R	01	HM										

Capaci tors

Δ	ITEM	PART NUMBER	DES	CRI	PTION	AREA
	C899	QCF21HP-103	0.01MF	50V	CERAMIC	
1	C901		22MF	16V	ELECTRO	
	C902	QEK51CM-226	22MF	167	ELECTRO	
1	C903	QFV81HJ-104	0.1MF	50V	T.FILM	
1	0904.		1000PF	50V	CERAMIC	
	C206	C	4.7MF	250	ELECTRO	
1	C907		150PF	50V	CERAMIC	
	C908		4.7MF	25V	ELECTRO	
	C909	QEK51HM-474G	0.47MF	50V	ELECTRO	
	C910		0.01MF	50V	CERAMIC	1
	C911		0.01MF	16V	CERAMIC	
	C912		22MF	50V	ELECTRO	
	C913	QEK51HM-475	4.7MF	50V	ELECTRO	1
	C914	QEK51HM-475	4.7MF	50V	ELECTRO	
	C915	GETBIAM-107	100MF	100	ELECTRO	
	C916	QETBIAM-107	100MF	10V	ELECTRO	
	C951	QCSB1HJ-470	47PF	50V	CERAMIC	
	C952			16V	CERAMIC	
i i	C953	QCVB1CM-103	0.01MF			ĺ
ı	C954	QCF21HP-473	0.047MF	50V	CERAMIC	
_	6734	QETB1AM-107	100MF	10V	ELECTRO	

Capacitors

Δ	ІТЕМ	PART NUMBER	DESCR	IPTION	ΛREΛ
	C973 C974 C975 C976 C977 C978 C979 C991 C995 C996	QETB1AM-476 QETB1AM-476 QETB1HM-105 QETB1HM-225 QETB1HM-225 QETB1HM-225 QCHB1EZ-223 QEK51EM-225G QEFB1EM-476	47MF 10V 47MF 10V 1MF 50V 2.2MF 50V 2.2MF 50V 2.2MF 50V 0.022MF 25V 2.2MF 50V 47MF 25V	ELECTRO ELECTRO ELECTRO ELECTRO ELECTRO CERAMIC ELECTRO BLECTRO BLECTRO BLECTRO	

A :: SAFETY PARTS

Resistors

Δ	ITEM	PART	NUMBER	DES	CRI	PTION	AREA
Δ	R061	QRD14C	J-3R3S	3.3	1/4W	UNF.CARBON	
Δ	R062	QRD14C	J-3R3S	3.3	1/4W	UNF.CARBON	
- 1	R901	QRD167	J-103	10K	1/6W	CARBON	1
- 1	R902	QRD167		10K	1/6W	CARBON	1
	R903	QRD167	J-105	1 M	1/6W	CARBON	
	R904	QRD167	J-105	1 M	1/6W	CARBON	
	R905	QRD167		15K	1/6W	CARBON	
	R906	QRD167		15K	1/6W	CARBON	
	R907	QRD167	J-562	5.6K	1/6W	CARBON	
	R908	QRD167	J-152	1.5K	1/6W	CARBON	
	R909	QRD167		470K	1/6W	CARBON	
	R910	QRD167	J-183	18K	1/6W	CARBON	1
	R911	QRD167		330K	1/6W	CARBON	
	R912	QRD167		47K	1/6W	CARBON	
	R913	QRD167		47K	1/6W	CARBON	
***	R914	QRD167		10K	1/6W	CARBON	
	R915	GRD167		10K	1/6W	CARBON	
	R917	QRD167		22K	1/6W	CARBON	
	R919	QRD167		10K	1/6W	CARBON	
	R920	QRD167		10K	1/6W	CARBON	
	R921	QRD167		330	1/6W	CARBON	
	R922	QRD167		330	1/6W	CARBON	
	R923	QRD167		33K	1/6W	CARBON	
	R951	QRD167		100K	1/6W	CARBON	1
	R952	QRD167		100K	1/6W	CARBON	
	R953	QRD167		10K	1/6W	CARBON	
	R954	QRD167		10K	1/6W	CARBON	
	R955	QRD167		1 M	1/6W	CARBON	1
	R956	QRD167		10K	1/6W	CARBON	
	R958	QRD167		10K	1/6W	CARBON	
****	R959	QRD167		3.3K	1/6W	CARBON	
	R960	QRD167		330	1/6W	CARBON	1
	R961	QRD167		270	1/6W	CARBON	
	R966	QRD167		4.7K	1/6W	CARBON	
	R971	QRD167J		270	1/6W	CARBON	i
	R972		-				
		QRD167	,	220	1/6W	CARBON	
	R974	QRD167J		270	1/6W	CARBON	1
- 1	R975	QRD167		2.7K	1/6W	CARBON	1
	R976	QRD167		2.7K	1/6W	CARBON	
-	R977	QRD167		39K	1/6W	CARBON	
	R978	QRD167		56	1/6W	CARBON	
,	R979	QRD167		39K	1/6W	CARBON	
	R980	QRD167		56	1/6W	CARBON	
	R985	QRD167		220	1/6W	CARBON	Į
	RA902	QRB099		100K	1/10W		i
	RA903	QRB139		100K	1/10W		
	RA904	QRB049		10K	1/10W		
	RA951	QRB049		47K	1/10W	R.NETWORK	
	VR971		A-E15B	100K		VARIABLE	
	VR972		W-E15B	100K		VARIABLE	1
	VR973	QVCB84	A-E53B	5 K		VARIABLE	1

Others

	1161 2				_			_	_							
Δ	ITEM	PART	NUM	BER	D	E	s	С	R	I	P	Т	I	0	N	MEA
		E1215	1-101		CH	CE	II	В	OAI	RD						
l		SBSG3	010Z		SCF	REN	1									
1	J553	EMV71	22-10	3	COL	NNE	CT	OR								
Δ	S001	QSROO	85-01	8	VOL	TA	GE	5	ELI	EC.	TOF	1				C
-	5901	ESPOO	01-01	8	TAC	T	SW	IT	CH							
	5902	ESPOO	01-01	8	TAC	T	SW	IT	CH							
	5903	ESPOO	01-01	8	TA	T	SW	IT	СН							
	5904	ESP00	01-01	8	TAC	T	SW	IT	СН							
	5905	ESP00	01-01	8	TA	T	SW	IT	СН							
	5906	ESP00	01-01	8	TA	Ţ	SW	IT	CH							Í
	\$907	ESPOO	01-01	8	TA	Ť	SW	IT	CH							
	\$908	ESP00	01-01	8	TA	Ţ	SW	ĮŢ	CH							1
	\$909	ESP00	01-01	8	TA	CT	SW	IT	CH							
	5910	ESPOO	01-01	8	TA	CT	SW	IT	CH							
1	\$911	ESP00	01-01	.8	TA	CT	SW	IT	CH							
	5912	ESPOO	01-01	8	TA	ĊŤ	Sh	ΪŤ	CH							
1	\$951	ESP00	01-01	8	TA	СТ	Sh	IT	CH							
1	\$952	ESP00	01-01	8	TA	CТ	Sh	IT	CH							i
1	\$953	ESP00	01-01	8	TA	СТ	SW	IT	CH							
i	5954	ESP00	01-01	8	TA	СT	SW	IT	CH							1
	\$955	ESPOO	01-01	8	TA	CT	SW	117	CH							
1	\$956	ESP00	01-01	8	TA	СТ	SV	IIT	CH							
1	\$957	ESP00	01-01	8	TA	СТ	SV	IT	CH							
1	\$958	ESPOO	01-01	.8	TA	СТ	SV	IT	CH							
1	\$959	ESPOO	01-01	8	TA	CT	SV	II	CH							I

Others

Δ	TEM	PART	NUM	BER	D	Ε	S	С	R	I	P	T	1	0	N	Λ	R	ΕA
	\$960	ESP000	1-018		TAC	Т	SW	IT	СН									
	\$961	ESP000	1-018		TAC	Т	SW	IT	СН									
	CF951	ECXOO	14-194	KM	RES	ON	AT	ΟŔ										
	FL901	ELUOOG	1-102		FL	TU	BE											
	FS901	E3400-	-448		FEL	T	SP	A C	ΕŔ									
	FW751	EWR36	3-25LS	T	FLA	T	WI	RE							•••••			
	FW752	EWR39	3-25LS	т	FLA	T	WI	RΕ								l		
	FW971	EWR35	3-25LS	T	FLA	T	WI	RE								1		
	FW972	EWR23	-30JN	ı	FLA	T	WI	RE										
	FW973	EWR33	3-1655	Т	FLA	T	WI	RE								1		
	FW974	EWR33	3-16LS	T	FLA	Ť	WI	RE								1		
	FW975	EWR331			FLA	T	WI	RE										
	HS552	E7094	5-H40E	3	HEA	T	SI	NK								1		
	H\$553	E7094	5-H40E	3	HEA	T	SI	NK										
	JA901	EMV71	23-028	3 R	CON	NE	CT	OR								1		
	WT001	E6776			WRA	PF	IN	Ġ	TE	M	NA	L				1	Ċ	
	WT002	E6776			WRA	PF	IN	G	TE	RMI	NA	L]	c	
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